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Thesis

READING ABILITY AS A FACTOR
IN SECONDARY SCHOOL SUCCESS

Submitted by

KATHERINE DOROTHY CROTTY
(B.S. in Ed., Boston University, 1930)

In Partial Fulfillment of the Requirements
for the Degree of Master of Education

1941

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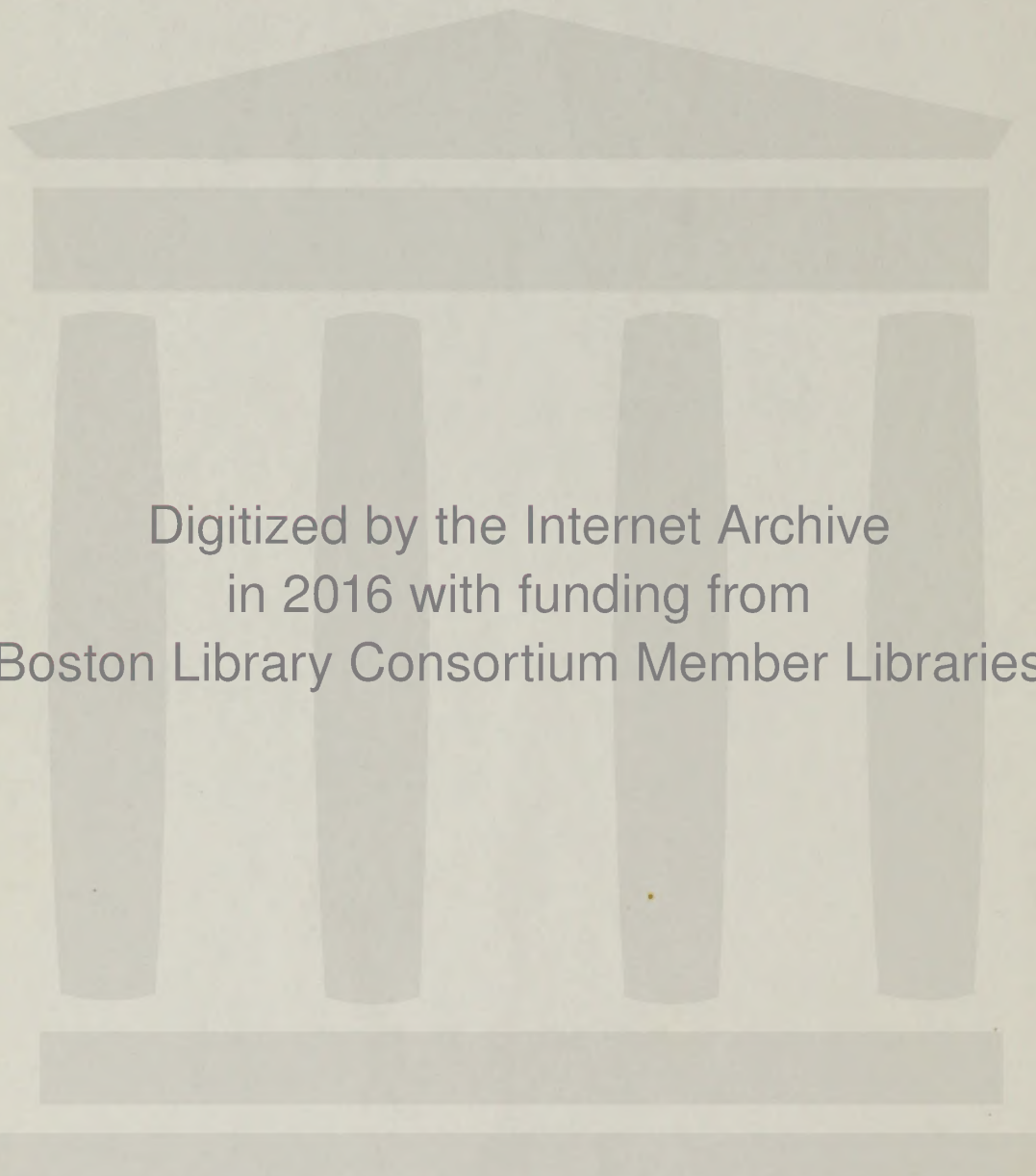
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EDUCATIONAL SIGNIFICANCE OF THE READING PROBLEM

Reading ability has become rather generally recognized in recent years as one of the important factors in academic success. However, the existence of the problem has been known to some extent for many years by students, educators, psychologists, and the general public.

As far back as 1909 Ayres gave a study of retardation among school children and drew attention to the fact that lack of motivation was one of the factors that had to be considered in connection with the problem. Other researchers have led to the same conclusion whenever the causes of failure in school work have been investigated.

INTRODUCTION

At the present time most of our schools and colleges are confronted with the problem of reading. It is a problem that has been recognized for many years and it is one that is still with us today.

There is a growing interest in the reading problem among teachers and in the general public. This is shown by the number of books, articles, and pamphlets that are now being published on the subject. Literature on the subject is being published at an ever increasing rate and the general public is becoming more and more interested in the problem. Discussion of the reading problem occupies a prominent place in the programs of teachers' meetings and conventions. Commercially produced aids and

HISTORICAL BACKGROUNDS OF THE READING PROBLEM

Reading ability has become rather generally recognized in recent years as one of the important factors in scholastic success. However, the existence of the problem has been known to some extent for many years by students, educators, psychologists, and members of the medical profession.

As far back as 1909 Ayre made a study of retardation among school children and drew attention to the fact that reading difficulties were among the factors that had to be considered in connection with the problem. Other researches have led to the same conclusion whenever the causes of failure in school work have been investigated. At the present time most of our schools and colleges are confronted with very definite educational problems associated to a greater or lesser extent with the reading ability of students.

There is a growing interest in the reading problem which is shown by the number of courses dealing with reading that are now conducted in the colleges and universities throughout the country. Literature on the subject is being published at an ever increasing rate and trained specialists are in demand by educational systems of practically every progressive community. Discussion of the reading problem occupies a prominent place in the programs of teachers' meetings and conventions. Commercially produced aids and

instruments designed to improve reading ability indicate that the problem is being attacked very seriously at the present time.

According to Gates and Bond, whose research was carried out in 1936, there are well over a million children in this country who are unable to do their school work satisfactorily because of reading difficulties. A study of Percival in 1926 shows that reading is the most common cause of school failures. Monroe (1932) says that from twelve to fifteen per cent of all school children are in need of remedial reading instruction. The National Education Association estimated in 1935 that only about one-half of the population of the United States beyond elementary school age are able to read satisfactorily.

That the challenge of the reading problem is being accepted by educators is evident from the number of publications devoted to it. In 1935 Betts listed over 1000 titles on the "Analysis, Prevention, and Correction of Reading Difficulties".

CAUSES OF READING DIFFICULTIES

Research on reading deficiencies has been carried on for about a century though the problem was approached from a different view-point from the present one. Before 1900 most of the research was done by psychologists and physicians

in German and French laboratories. Their investigations are recounted by several writers of the past forty years among whom were Dearborn (1906), Huey (1908), Gray (1917), and Schmidt (1917).

The studies were continued in this country by men who had worked on the reading problem in Europe. Dodge, Dearborn, Huey, Delabarre, Lough, Schmidt, Buswell, Gray, Freeman, Judd and others did a great deal of laboratory work on eye behavior in reading. Their investigations, while growing out of mere curiosity, have contributed greatly to the recent accomplishments in remedial reading and the diagnosis of reading difficulties.

Extreme difficulty on the part of persons of normal mental ability or better were explained by medical men in terms of pathology. Hinshelwood (1902) explained the inability to read as a defect of the brain which might be caused by disease or accident. He believed that even extreme cases of inability in reading could be remedied by clinical work and individual instruction.

Another theory offered in explanation of poor reading ability is the relation between hand and eye dominance. Dearborn in 1929 arrived at the conclusion that in order to avoid difficulties in reading and writing one should be either left handed and left-eyed, or right-handed and right-eyed, preferably the latter. Difficulties appear especially

in children who have been changed over in handedness or whose one-sidedness or lateral dominance has never been well-established.

On the other hand Gates (1935), Haefner (1929), and Woody and Phillips (1934) found no relationship between achievement in reading and manual dominance. It is clear therefore that the evidence on dominance is conflicting.

It is obvious that children with poor hearing and marked visual defects are likely to experience difficulty in acquiring the skills and techniques essential to good reading, but any child -even the blind and deaf- can be taught to read.

It has been demonstrated repeatedly that there is a high correlation between reading scores and mental ages as measured by standard tests of intelligence. Gray (1922) reported low mental abilities as one of the most frequently cited causes of reading difficulty. Gates (1930) says that it is a remarkable achievement to teach any child of less than 65 I.Q. to read material unassisted. Davidson (1931) reported that "brightness is the most important thing in reading".

In spite of all this, the so-called special reading disability cases are often people of normal mental abilities or better, who, despite all efforts in their behalf, fail to learn to read.

But whatever the causes of weakness in reading ability the fact remains that the deficiency exists to a very considerable extent among pupils of all ages and grades from the elementary schools up to and including the colleges. Further it has been demonstrated time and again that the reading difficulties of most pupils can be corrected by proper remedial instruction. It is becoming more and more apparent from researches of recent years that what has been considered dullness in many pupils is nothing more than poor reading skill. Failures in school work, it is now generally agreed, are due in a large measure to deficiencies in reading.

AIMS OF THIS STUDY

This thesis is intended to bring out definitely the relation between scholarship and reading ability. The number of cases studied (about 400) and the duration of the experiment (over a year) make the results herein presented valid beyond reasonable doubt.

While it is now generally recognized that reading plays an important part in scholastic success, very little experimentation has been done to show to what extent reading is a factor. Finck's experiment* is the nearest to those

* Finck, Edgar M., "Relation of Ability in Reading to Success in Other Subjects". Elementary School Journal, 36: 260-7, Dec. 1935

carried out in this thesis. He attempted to determine the relation of ability in reading to success in other subjects and came to the conclusion that improvement in ability to read is accompanied by improved achievement in those subjects which involve a great deal of reading.

His conclusion is based on a study of twenty-one pairs of pupils selected so that they were as nearly alike as possible in age, mental ability, and achievement in school work. One of each pair was given special reading instruction each day for one-half hour over a period of five months. The entire group was tested again at the end of that period for reading ability and achievement in school work. The pupils who had been given special reading instruction showed decidedly better improvement in both reading ability and achievement than the others. This conclusion is in accord with what would be expected from the results of this thesis.

However, the conditions under which Finck conducted his experiment were such that his results can not be relied upon. The teachers of the two groups were inexperienced, one of them "working only for her pay check"; attendance was irregular; the control pupils knew their status; four control pupils were close relatives of experimental pupils; and the average intelligence quotients of the two groups was only 87, with a range of 64 to 105. This last condition is

the more interesting because of the conclusions reached in the Newton experiments* that "Pupils selected for special reading groups should have mental abilities high enough to profit from small-group instruction. In general, pupils whose reading ages already equal or exceed their mental ages should not be in these groups".

This thesis does not involve a remedial reading program. It is simply intended to show: (1) what achievement in high school is made by pupils of different reading abilities, and (2) what the reading difficulties are among sophomores at the Somerville High School.

RESEARCH REPORT
SUBMITTED FOR THE DEGREE OF
BACHELOR OF ARTS
BY
SOMERVILLE HIGH SCHOOL

* Drake, C. Elwood, "Reading and Remedial Reading in a Junior High School". Harvard Educational Review, 40: 19-29, Jan. 1940.

METHOD OF APPROACH TO THE PROBLEM

This thesis contains two separate and distinct analyses of problems of reading ability in relation to success in school work. Each is complete and independent in itself, but the results in both cases point to the same general conclusions.

Part I of this paper deals with a study of the reading ability of 300 junior high school pupils (ninth grade) made three months before graduation. The plan was to take the results of this investigation and compare them with the school records.

PART I

A STUDY OF THE RELATIONSHIP BETWEEN READING ABILITY AND SCHOLASTIC SUCCESS FOR 300 SOPHOMORES AT

SOMERVILLE HIGH SCHOOL

It was found that the study was made on the basis of over a year rather than on a single term. In this way it was felt that adjustments which had to be made as a result of the change from junior high to high school would not affect the comparison to any appreciable extent. Under this plan of procedure it appeared that the conclusions arrived at would be accurate and dependable beyond any reasonable doubt. The chief inconveniences encountered in the method was the delay of more than a year which was necessary before the study could be completed.

METHOD OF APPROACH TO THE PROBLEM

This thesis includes two separate and distinct analyses of problems of reading ability in relation to success in school work. Each is complete and independent in itself, but the results in both cases point to the same general conclusions.

Part I of this paper deals with a study of the reading ability of 300 junior high school pupils (ninth grade) made three months before graduation. The plan was to take the results of this investigation and compare them with the school records made by these same pupils in their sophomore year in high school.

It was decided that the comparison would be made on the basis of average marks for the whole year rather than on a single term. In this way it was felt that adjustments which had to be made as a result of the change from junior high to high school would not affect the comparison to any appreciable extent. Under this plan of procedure it appeared that the conclusions arrived at would be accurate and dependable beyond any reasonable doubt. The chief inconvenience encountered in the method was the delay of more than a year which was necessary before the study could be completed.

Part II aimed to learn specifically just what reading weaknesses do exist among Somerville High School sophomores. This problem was met by analyzing the test results by parts rather than as a whole. The four groups tested were unquestionably of widely different abilities because of the selective method that was used in their formation. The results could therefore be expected to agree with the results of Part I insofar as relative standings of the classes in reading ability are concerned. In other words, if a real correlation does exist between reading ability and success in school work, then the best of the four groups (since it was selected on the basis of school marks) should stand highest in reading ability. Likewise, the poorest class in scholarship should be lowest in reading ability.

PROCEDURE

The Iowa Silent Reading Tests were administered to the 300 ninth grade pupils. The rate of silent reading scores and grade equivalents were tabulated from the results of the tests. Likewise the total comprehension scores and grade equivalents and the percentile ranks were listed for each pupil.

The results were arranged by percentile rank and divided into quartiles for comparison. Since the highest total comprehension grade which can be determined by this

test is 10-10 (the last month of the tenth grade) this is the highest grade appearing in the results. Twelve pupils attained this rating. The lowest comprehension grade equivalent for any of the pupils was 5-4. Two such records appear at the bottom of the first quartile. Between these two extremes the results were rather uniformly distributed.

The next step in the analysis was to tabulate the scholastic records made by the pupils during their tenth grade. It was decided that it would be of interest to average English marks for the four terms of the school year, as well as averages for all subjects combined. The year's record for each pupil was looked up in the high school record books and numerical ratings computed.

The marks used in the school are A, B, C, C-, D, and E. The "point value" of the subjects varies according to the number of periods of class instruction and outside preparation. English, for example is a four point subject, Stenography is five, and Mechanical Drawing one. In order to calculate averages on a numerical basis and provide for the proper weighting of the various studies the following method was used.

CALCULATION OF SCHOLASTIC AVERAGES

A numerical scale was used in place of the letter scale so that A=5, B=4, C=3, C-=2, D=1, E=0. A five point subject was given five times the weight of a one point subject. A pupil receiving for his four English marks C, C-, B, A, would have his average for the year computed thus:

$$C^-=2$$

$$C=3$$

$$B=4$$

$$\underline{A=5}$$

$$\text{Average mark} = 14/4 = 3.50$$

Total 14

The average mark of 3.50 represents a literal grade halfway between B and C.

Below is a sample calculation of the General Scholastic Rating (all subjects of the year's work) for Marion Marino, one of the pupils considered in this investigation.

Stenography	5	5	4	5	5	19	35
Commerce and Industry	4	5	5	5	5	20	50
Shorthand Practice	5	4	5	5	4	19	9
Commercial Drawing	5	5	5	5	5	20	20
Total Points	19	19	19	19	19	76	347

SCHOLASTIC RECORD

Subject	Points	Term			
		I	II	III	IV
English	4	B	B	B	B
French	5	B	B	B	B
Stenography	5	A	B	A	A
Commerce and Industry	4	A	A	A	A
Choral Practice	$\frac{1}{2}$	B	B	B	B
Commercial Drawing	<u>1</u>	A	A	A	A
Total Points	$19\frac{1}{2}$				

By using the numerical rating scale these marks become

Subject	Points	Term				Total	Weighted Total
		I	II	III	IV		
English	4	4	4	4	4	16	64
French	5	4	4	4	4	16	80
Stenography	5	5	4	5	5	19	95
Commerce and Industry	4	5	5	5	5	20	80
Choral Practice	$\frac{1}{2}$	4	4	4	4	16	8
Commercial Drawing	<u>1</u>	5	5	5	5	20	<u>20</u>
Total Points	$19\frac{1}{2}$	Weighted Combined Total					347

Dividing this combined weighted total by 4 (since there are 4 terms) gives an average weighted total per term of 86.75. This number (86.75) is divided by the number of "points" of work carried by the pupil, $19\frac{1}{2}$. The quotient obtained, 4.44, is the General Scholastic Rating of the pupil for the entire year's work. Since A=5 and B=4 in this system, the pupil achieved an average grade between A and B.

TABLE OF RESULTS

1916 SILENT READING TESTS

TABLE OF RESULTS
IOWA SILENT READING TESTS

SCORES COMBINED FOR
NORTHEASTERN, SOUTHERN, WESTERN JUNIOR HIGH SCHOOLS

GRADE 9.7

IOWA SILENT READING TESTS

QUARTILE IV

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tage	Total Compre- hension Grade
Donnelly, M.	39	10-10	193	90	10-10
Holland, G.	36	10-10	191	80	10-10
Almeida, D.	41	10-10	190	80	10-10
Keyes, B.	41	10-10	189	80	10-10
Solari, L.	29	8-10	189	80	10-10
McKittrick, A.	40	10-10	188	80	10-10
Conroy, B.	43	10-10	184	75	10-10
Thompson, M.	38	10-10	184	75	10-10
Camerlengo, R.	29	8-10	182	70	10-10
Greene, D.	33	10-10	180	70	10-10
Buinetzky, V.	30	9-5	177	60	10-10
Berry, M.	39	10-10	176	60	10-10
Gilman, A.	41	10-10	175	60	10-9
Williams, D.	43	10-10	174	60	10-8

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Bent, M	37	10-10	174	60	10-8
Chakalis, A.	31	9-10	172	60	10-7
White, F.	37	10-10	172	60	10-7
Menzel, M.	43	10-10	168	50	10-5
Barentine, M.	36	10-10	168	50	10-5
Morgan, B.	34	10-10	168	50	10-5
Abbott, L.	43	10-10	167	50	10-5
Phillips, E.	41	10-10	165	50	10-3
Seavey, D.	41	10-10	164	50	10-3
Tessier, M.	36	10-10	164	50	10-3
Lennon, M.	35	10-10	164	50	10-3
Holland, M. L.	43	10-10	163	50	10-2
Horgan, A.	43	10-10	163	50	10-2
Patterson, F.	27	7-10	163	50	10-2
Grindle, M.	43	10-10	162	50	10-2
Crowe, H.	43	10-10	162	50	10-2
Maio, M.	34	10-10	162	50	10-2
Zouvartian, Z.	34	10-10	161	50	10-1
Fermoyle, L.	35	10-10	160	50	10-1

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Thulin, B.	32	10-5	159	50	9-10
Sykes, P.	30	9-5	159	50	9-10
Cagliuso, F.	39	10-10	158	50	9-10
Doane, E.	34	10-10	158	50	9-10
Higden, M. J.	39	10-10	157	40	9-9
Safarian, D.	33	10-10	157	40	9-9
Eccles, A.	29	8-10	157	40	9-9
Wypych, H.	34	10-10	157	40	9-9
Kinsley, D.	30	9-5	156	40	9-9
Anderson, E.	38	10-10	155	40	9-8
Paone, T.	26	7-7	155	40	9-8
Beckett, G.	39	10-10	154	40	9-8
Hobbs, J.	37	10-10	154	40	9-8
Buzkys, G.	29	8-10	154	40	9-8
Gosselin, J.	27	7-10	154	40	9-8
MacLean, K.	33	10-10	153	40	9-7
Morris, A.	30	9-5	153	40	9-7
Harding, H.	24	6-10	153	40	9-7
Irving, W.	22	6-4	153	40	9-7

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Nickerson, P.	38	10-10	152	40	9-6
Gibbons, P.	21	5-10	151	40	9-6
Scott, V.	39	10-10	150	40	9-5
Carrier, J.	22	6-4	149	40	9-5
Churchey, D.	32	10-5	148	40	9-4
Woodward, L.	38	10-10	147	40	9-4
Smith, K.	36	10-10	147	40	9-4
<u>QUARTILE III</u>					
Hume, I.	29	8-10	147	40	9-4
Reynolds, F.	28	8-5	147	40	9-4
O'Brien, M.	36	7-7	147	40	9-4
Conti, F.	31	9-10	145	30	9-2
Karlsen, H.	30	9-5	145	30	9-2
Regan, M.	26	7-7	144	30	9-2
Armstrong, V.	23	6-7	144	30	9-2
Ferrari, F.	20	5-7	144	30	9-2
Crane, B.	20	5-7	144	30	9-2

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Fitzgerald, G.	16	3-10	144	30	9-2
D'Angio, J.	26	7-7	143	30	9-1
Fuccillo, G.	29	8-10	142	30	9-1
Wilson, A.	26	7-7	142	30	9-1
Baillie, J.	23	6-7	142	30	9-1
Trant, A.	32	10-5	141	30	8-10
Irving, A. P.	26	7-7	141	30	8-10
Steens, R.	24	6-10	141	30	8-10
Douglas, M.	22	6-4	141	30	8-10
Marino, A. M.	36	10-10	140	30	8-9
Gilroy, I.	26	7-7	140	30	8-9
Robinson, F. M.	34	10-10	139	30	8-9
Lowe, R.	22	6-4	139	30	8-9
Fleming, K.	41	10-10	139	30	8-9
Sica, M. T.	24	6-10	138	30	8-9
Donahue, L.	22	6-4	138	30	8-9
Del Medico, F.	19	5-4	138	30	8-9
Toomey, B.	18	4-10	138	30	8-9
Fraser, E.	36	10-10	137	30	8-8

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Buonomo, R. M.	28	8-5	137	30	8-8
Yeomans, R.	25	7-4	137	30	8-8
Marks, V.	34	10-10	136	30	8-8
Solari, E.	31	9-10	135	30	8-7
Oliver, T.	27	7-10	135	30	8-7
Johnson, E.	22	6-4	135	30	8-7
Athenakis, H.	31	9-10	134	25	8-7
Connolly, D.	25	7-4	134	30	8-7
Syda, M. L.	24	6-10	134	25	8-7
Noble, F.	21	5-10	133	25	8-6
Mackey, S.	38	10-10 up	132	25	8-6
Giarizzo, M. S.	31	9-10	132	25	8-6
Quinn, D.	23	6-7	132	25	8-6
Preziosi, R.	19	5-4	132	30	8-6
McLaughlin, L.	34	10-10 up	131	25	8-5
White, M.	33	10-10	131	25	8-5
Hildreth, V.	22	6-4	131	25	8-5
DiMartino, J. E.	39	10-10 up	130	25	8-10
Linehan, M.	22	6-4	130	25	8-5

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Hayes, E.	40	10-10 up	129	25	8-4
O'Connor, P.	30	9-5	128	20	8-4
Wallace, A.	22	6-4	128	20	8-4
Beecher, M.	32	10-5	127	20	8-3
Byrne, C.	30	9-5	127	20	8-3
Murphy, F.	30	9-5	127	20	8-3
Meidros, L.	29	8-10	127	20	8-3
Maffeo, E.	23	6-7	127	20	8-3
Mello, D.	43	10-10	125	20	8-2
Stringos, E.	37	10-10	125	20	8-2
Marino, L.	30	9-5	125	25	8-2
Smith, E.	27	7-7	125	20	8-2
Thompson, M.	22	6-4	125	20	8-2
Poloian, M.	39	10-10	124	20	8-2
Thompson, L.	32	10-5	124	20	8-2
Psarianes, M. E.	25	7-7	124	20	8-2
McCollem, A.	24	7-7	124	20	8-2
Vrattos, V.	21	5-10	124	20	8-2

QUARTILE II

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Wambolt, B.	13	3-1	124	20	8-2
Flewelling, B. S.	40	10-10 up	123	20	8-1
Robinson, E.	29	8-10	123	20	8-1
Estrella, G.	27	7-10	123	20	8-1
Fletcher, A.	24	6-10	123	20	8-1
Cleveland, M.	21	5-10	123	20	8-1
March, D.	14	3-4	123	20	8-1
Davis, R.	31	9-10	122	20	8-1
Pando, B.	30	9-5	122	20	8-1
McGrath, A.	22	9-5	122	20	8-1
Brenner, D.	22	6-4	122	20	8-1
Kelly, F.	18	6-4	122	20	8-1
England, L.	18	4-10	122	20	8-1
Dever, B.	36	10-10	121	10	7-10
Kataska, L. H.	31	9-10	121	10	7-10
Boyages, A.	30	9-5	120	10	7-10
Ruby, R.	21	5-10	120	10	7-10
Fifield, J.	34	10-10 up	119	10	7-9
Patten, I. J.	29	8-10	119	10	7-9

QUARTILE II

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Newton, H.	41	10-10 up	118	10	7-9
Brousseau, M.	26	7-7	118	10	7-9
Gearon, M.	23	6-7	118	10	7-9
Blow, M.	20	5-7	118	10	7-9
Rego, M.	24	7-5	118	10	7-9
Limberakis, E.	27	7-10	117	10	7-9
Carney, L.	27	7-10	112	10	7-9
Miele, M.	26	7-7	117	10	7-9
Shea, M.	20	5-7	117	10	7-9
Tsotsi, H.	29	8-10	116	10	7-9
Van Iderstine, G.	23	6-7	116	10	7-8
Viola, M.	22	6-4	116	10	7-8
Girdis, E.	22	6-4	116	10	7-8
McKenna, R.	19	5-4	116	10	7-8
Rourke, D.	41	10-10 up	115	10	7-8
Luna, E.	30	9-5	115	10	7-8
Walsh, A.	23	6-7	115	10	7-8
McVarish, E.	20	5-7	115	10	7-8
Volpe, E.	17	5-4	115	10	7-8

QUARTILE II

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
O'Hara, M.	18	4-10	115	10	7-8
Schrage, R.	22	6-4	114	10	7-8
Marsie, J.	21	5-10	114	10	7-8
Park, C.	16	3-10	114	10	7-7
Counaris, K.	41	10-10 up	113	10	7-7
Cotter, F.	22	6-4	113	10	7-7
Cordiero, F.	29	8-10	112	10	7-6
Tyschok, N.	23	6-7	112	10	7-6
Catanzano, C.	22	6-4	112	10	7-6
McCarthy, M.	38	10-10 up	111	10	7-6
McMahon, R.	22	6-4	111	10	7-6
Campo, L.	22	6-4	111	10	7-6
Doherty, E.	36	10-10 up	110	10	7-5
Kearns, D.	22	6-4	109	1-10	7-5
DiCicco, L.	22	4-10	109	1-10	7-5
Casdia, H.	32	10-5	108	1-10	7-5
DiSarcina, T.	24	6-10	108	1-10	7-5
Salisbury, G.	25	7-4	107	1-10	7-4
Zona, V.	23	6-7	107	1-10	7-4

QUARTILE II

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Wallace, D.	22	6-4	107	1-10	7-4
MacAulay, B.	22	6-4	107	1-10	7-4
Pratt, F.	21	5-10	107	1-10	7-4
Cavazzi, M.	19	5-4	107	1-10	7-4

QUARTILE I

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Halloran, F.	31	9-10	106	1-10	7-4
Asplund, D.	20	5-7	106	1-10	7-4
De Feo, O.	17	4-5	106	1-10	7-3
Santoro, C.	35	10-10 up	105	1-10	7-3
Tseko, V.	25	7-4	105	1-10	7-3
Korzemeioska, S.	25	7-4	105	1-10	7-3
Duva, E.	22	6-4	105	1-10	7-3
Dwyer, R.	34	10-10 up	104	1-10	7-3
Galdi, G.	15	3-7	104	1-10	7-3
DiMilla, F.	12	3-1	104	1-10	7-3
Agresti, M.	43	10-10 up	103	1-10	7-2
Banks, B.	26	6-10	103	1-10	7-2
Flemming, P.	22	6-4	103	1-10	7-2
Cammarata, R.	30	9-5	102	1-10	7-2
Croke, D.	27	7-10	102	1-10	7-2
Bruno, L.	24	6-10	102	1-10	7-2
Snook, E.	22	6-4	102	1-10	7-2
Souza, D.	30	9-5	100	1-10	7-1
Lees, B.	23	6-7	100	1-10	7-1

QUARTILE I

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Morris, D.	15	3-7	100	1-10	7-1
Anastasi, P.	35	10-10 up	98	1-10	6-10
Alberto, V.	24	6-10	98	1-10	6-10
Cella, L.	11	3-1 Below	98	1-10	6-10
Salipante, M.	24	6-10	97	1-10	6-9
Albano, D.	23	6-7	96	1-10	6-9
Breton, L.	19	5-4	96	1-10	6-9
Recupero, N.	20	5-7	95	1-10	6-9
Agostino, A.	43	10-10 up	94	1-10	6-8
McNeill, M.	19	5-4	94	1-10	6-8
Fraser, E.	38	10-10 up	93	1-10	6-8
Naughton, C.	34	10-10 up	93	1-10	6-8
Biffano, J.	31	9-10	92	1-10	6-7
Gibbons, F.	27	7-10	92	1-10	6-7
Caslellano, R.	22	5-7	92	1-10	6-7
Langein, F.	17	4-5	91	1-10	6-7
Lowe, F.	10	5-4 Below	91	1-10	6-7
Cosgrove, M.	22	6-4	90	1-10	6-7
Coughlin, M.	19	5-4	90	1-10	6-7

QUARTILE I

Name	Rate of Silent Reading Score	Rate of Silent Reading Grade	Total Compre- hension Score	Per- cen- tile	Total Compre- hension Grade
Solimine, R.	33	10-10	88	1-10	6-6
Barnes, R.	22	6-4	88	1-10	6-6
Bryant, P.	11	3-1 Below	88	1-10	6-6
Draghi, R.	22	6-4	87	1-10	6-6
DelleDome, E.	23	3-10	86	1-10	6-5
Malone, M.	27	7-10	84	1-10	6-5
Fedele, C.	24	6-10	84	1-10	6-4
Hayes, M.	23	6-7	84	1-10	6-4
McDonnell, V.	27	7-10	83	1-10	6-4
Ewert, E.	15	3-7	83	1-10	6-4
Cowan, D.	20	5-7	79	1-10	6-2
Cadoury, A.	20	5-7	77	1-10	6-1
Holmes, J.	23	6-7	75	1%	5-10
Beckett, F.	20	4-10	72	1%Below	5-9
Campos, I.	41	10-10 up	70	1%Below	5-8
Shea, J.	33	10-10	66	1%Below	5-6
Chapman, D.	16	5-4	62	1%Below	5-4
Tseko, A.	22	6-4	61	1%Below	5-4

SCHOLASTIC RECORDS--GRADE 10

COMPARED WITH READING PERCENTILES--GRADE 9

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Dunnally, M.	80	4.21	3.70
Hollan, B.	80	4.25	3.58
Almida, B.	80	5.00	4.33
Kayes, B.	80	3.75	3.67
Salari, L.	80	4.00	4.13
McKinnick, A.	80	4.00	3.38
Gentry, B.	80	4.00	3.25
Talapat, M.	75	4.25	3.50
Underland, A.	70	4.35	3.71
Green, B.	70	3.35	3.67
Winkler, V.	65	4.50	4.52
Berry, M.	60	3.00	2.67
Wilson, A.	60	3.75	4.25
Williams, D.	60	3.75	3.67
Scott, B.	60	4.00	4.43
Chenille, A.	60	3.00	4.45
White, F.	50	3.75	3.99
Manuel, M.	50	3.00	4.75

TABLE OF
SCHOLASTIC RECORDS
COMPARED WITH READING
PERCENTILES

SCHOLASTIC RECORDS--GRADE 10

COMPARED WITH READING PERCENTILES--GRADE 9

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Donnelly, M.	90	4.25	3.70
Holland, G.	80	4.25	3.82
Almeida, D.	80	5.00	4.99
Keyes, B.	80	3.25	3.67
Solari, L.	80	5.00	4.32
McKittrick, A.	80	3.50	2.68
Conroy, B.	75	4.00	3.23
Thompson, M.	75	4.25	3.80
Camerlengo, R.	70	4.25	3.71
Greene, D.	70	3.25	3.87
Buinetsky, V.	60	4.50	4.52
Berry, M.	60	3.00	2.67
Gilman, A.	60	2.75	4.25
Williams, D.	60	2.75	3.07
Bent, M.	60	4.00	4.45
Chakalis, A.	60	5.00	4.45
White, F.	60	2.75	2.99
Menzel, M.	50	5.00	4.98

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Barentine, M.	50	4.50	4.22
Morgan, B.	50	3.50	3.81
Abbott, L.	50	3.25	3.84
Phillips, E.	50	4.75-	4.49
Seavey, D.	50	4.00	3.40
Tessier, M.	50	4.25	4.21
Lennon, M.	50	3.25	3.71
Holland, M. L.	50	4.50	4.28
Horgan, A.	50	4.50	4.58
Patterson, F.	50	4.00	2.71
Grindle, M.	50	4.25	3.59
Crowe, H.	50	4.00	3.91
Maio, M.	50	5.00	3.94
Zouvartian, Z.	50	4.25	4.26
Fermoyle, L.	50	4.00	3.68
Thulin, B.	50	4.00	3.92
Sykes, P.	50	3.00	2.76
Cagliuso, F.	50	3.75	4.46
Doans, E.	50	4.25	3.88
Higden, M. J.	40	3.00	2.47

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Safarian, D.	40	3.25	2.18
Eccles, A.	40	5.00	4.80
Wypych, H.	40	4.00	3.63
Anderson, E.	40	4.25	4.21
Paone, T.	40	4.25	4.26
Beckett, G.	40	3.00	2.36
Hobbs, J.	40	4.00	3.46
Buzkys, G.	40	5.00	4.26
Gosselin, J.	40	3.25	4.16
MacLean, K.	40	4.00	2.58
Morris, A.	40	2.25	2.56
Harding, H.	40	2.50	3.38
Irvine, W.	40	4.50	2.86
Nickerson, P.	40	2.75	1.58
Gibbons, P.	40	3.50	3.55
Scott, V.	40	3.00	2.64
Carrier, J.	40	5.00	3.24
Churchey, D.	40	3.50	3.92
Woodward, L.	40	3.00	2.36
Smith, K.	40	3.75	4.17

Name	Reading Percentage Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Estarian, D.	40	3.35	2.18
Eckles, A.	40	3.00	4.30
Wypych, H.	40	4.00	3.63
Anderson, E.	40	4.35	4.21
Paine, T.	40	4.35	4.36
Beckett, G.	40	3.00	2.36
Hobbs, J.	40	4.00	3.46
Burkya, G.	40	3.00	4.26
Gonselin, J.	40	3.35	4.16
MacLean, K.	40	4.00	2.33
Mortie, A.	40	2.95	2.56
Harting, H.	40	2.50	3.36
Irvine, W.	40	4.50	2.66
Wickerson, F.	40	2.75	1.56
Gibbons, P.	40	3.50	3.53
Scott, V.	40	3.00	2.64
Carlier, J.	40	3.00	3.24
Churchoy, D.	40	3.50	3.92
Woodward, I.	40	3.00	2.36
Balch, K.	40	3.75	4.17

QUARTILE III

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Hume, I.	40	3.75	2.64
Reynolds, F.	40	3.25	3.15
O'Brien, M.	40	5.00	4.18
Conti, F.	30	2.25	2.87
Karlsen, H.	30	3.25	3.57
Regan, M.	30	4.00	3.75
Armstrong, V.	30	3.00	2.77
Ferrari, F.	30	2.25	3.14
Crane, B.	30	3.50	3.35
Fitzgerald, G.	30	3.50	3.11
D'Angio, J.	30	4.25	4.58
Fuccillo, G.	30	3.50	4.51
Wilson, A.	30	4.00	3.29
Baillie, J.	30	4.00	3.30
Trant, A.	30	4.75	3.56
Irving, A. P.	30	3.25	4.54
Steens, R.	30	3.25	3.50
Douglas, M.	30	3.75	4.14
Marino, A. M.	30	4.00	4.21

QUARTILE III

Name	Reading Percentile Grade 3	English Average Grade 10	Scholastic Rating Grade 10
Hume, I.	40	2.75	2.64
Reynolds, F.	40	2.25	2.15
O'Brien, M.	40	2.00	4.18
Condit, F.	30	2.25	2.87
Karlson, H.	30	2.25	2.27
Bogan, M.	30	4.00	2.75
Armstrong, V.	30	2.00	2.77
Ferrari, F.	30	2.25	2.14
Crane, B.	30	2.50	2.35
Fitzgerald, G.	30	2.50	2.11
D'Angelo, J.	30	4.25	4.58
Fucillo, G.	30	2.50	4.51
Wilson, A.	30	4.00	2.29
Ballie, J.	30	4.00	2.30
Trant, A.	30	4.75	2.56
Irvine, A. P.	30	2.25	4.54
Steen, E.	30	2.25	2.50
Douglas, M.	30	2.75	4.14
Marino, A. M.	30	4.00	4.21

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Gilroy, I.	30	2.50	3.37
Robinson, F. M.	30	3.50	3.41
Lowe, R.	30	5.00	4.13
Fleming, K.	30	4.75	3.15
Sica, M. T.	30	4.25	4.04
Donahue, L.	30	4.25	2.92
Del Medico, F.	30	3.50	3.17
Toomey, B.	30	1.50	2.05
Fraser, E.	30	5.00	3.55
Buonomo, R. M.	30	3.75	3.99
Yeomans, R.	30	2.25	2.33
Marks, V.	30	3.50	3.07
Solari, E.	30	3.75	3.28
Oliver, T.	30	4.00	4.00
Johnson, E.	30	3.25	2.73
Athenakis, H.	25	5.00	4.44
Connolly, D.	30	3.25	3.96
Syda, M. L.	25	4.00	4.12
Noble, F.	25	4.00	2.74
Mackey, S.	25	4.00	3.05

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Giarizzo, M. S.	25	4.75	4.79
Quinn, D.	25	4.00	3.22
Preziosi, R.	30	4.25	4.00
McLaughlin, L.	25	2.00	2.27
White, M.	25	5.00	4.53
Hildreth, V.	25	3.00	2.57
Di Martino, J. E.	25	3.25	3.80
Linehan, M.	25	2.75	2.41
Hayes, E.	25	3.50	3.17
O'Connor, P.	20	1.75	1.70
Muskalski, L.	20	4.25	3.87
Wallace, A.	20	2.25	2.25
Beecher, M.	20	4.00	3.29
Byrne, C.	20	3.00	2.66
Murphy, P.	20	3.25	2.20
Medeiros, L.	20	3.00	3.25
Maffeo, E.	20	5.00	4.07
Mello, D.	20	3.50	2.95
Stringos, E.	20	3.75	3.08
Marino, L.	25	4.00	4.34
Smith, E.	20	4.25	3.38

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Giarizzo, M. S.	85	4.75	4.75
Gulan, D.	85	4.00	3.85
Prescott, R.	80	4.25	4.00
McLaughlin, L.	85	3.00	3.85
White, M.	85	3.00	4.55
Hilbreth, V.	85	3.00	3.85
Di Martino, J. E.	85	3.25	3.80
Lindeman, M.	85	3.75	3.41
Hayes, F.	85	3.50	3.15
O'Connor, P.	80	1.75	1.70
Muskalski, L.	80	4.25	3.85
Wallace, A.	80	3.25	3.25
Baecher, M.	80	4.00	3.85
Byrne, C.	80	3.00	3.68
Murphy, P.	80	3.25	3.80
Kedzie, L.	80	3.00	3.25
Maffeo, E.	80	3.00	4.05
Kello, D.	80	3.50	3.95
Stringos, E.	80	3.75	3.08
Martino, L.	85	4.00	4.34
Smith, E.	80	4.25	3.38

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Thompson, M.	20	4.00	2.63
Poloian, M.	20	5.00	3.67
Thompson, L.	20	4.00	2.99
Psarianas, M. K.	20	3.75	3.65
McCollem, A.	20	3.25	2.63
Vrattos, V.	20	2.75	2.28
Cleveland, E.	20	3.25	2.36
Smith, D.	20	3.00	2.39
Smith, R.	20	4.00	3.53
Smith, E.	20	4.00	4.23
McGrath, A.	20	4.00	3.34
Grande, G.	20	4.75	3.57
Smith, V.	20	3.75	3.49
Smith, L.	20	3.50	2.74
Smith, R.	20	3.00	3.34
Grande, L. H.	20	3.00	4.30
Smith, V.	20	4.00	3.43
Smith, E.	20	3.00	4.40
Smith, V.	20	3.50	3.71
Smith, L. H.	20	4.50	4.14

QUARTILE II

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Wambolt, B.	20	4.00	3.88
Flewelling, B. S.	20	2.75	2.82
Robinson, E.	20	3.25	2.43
Estrella, G.	20	2.75	2.93
Fletcher, A.	20	3.75	3.01
Cleveland, M.	20	3.25	2.56
March, D.	20	3.00	2.39
Davis, R.	20	4.00	3.55
Pando, B.	20	4.00	4.22
McGrath, A.	20	4.00	3.94
Brenner, D.	20	4.75	3.87
Kelly, F.	20	3.75	3.49
England, L.	20	3.50	2.76
Dever, B.	10	3.00	3.34
Kataska, L. H.	10	5.00	4.30
Boyages, A.	10	4.00	3.46
Ruby, R.	10	3.00	2.88
Fifield, J.	10	3.50	3.71
Patten, I. J.	10	4.50	4.16

QUARTILE II

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Wambolt, E.	80	4.00	3.88
Flawelling, B. B.	80	3.75	3.88
Robinson, E.	80	3.85	3.43
Estrella, G.	80	3.75	3.93
Fletcher, A.	80	3.75	3.01
Cleveland, M.	80	3.85	3.58
March, D.	80	3.00	3.39
Davis, H.	80	4.00	3.85
Pando, B.	80	4.00	4.88
McGrath, A.	80	4.00	3.94
Brenner, D.	80	4.75	3.87
Kelly, F.	80	3.75	3.49
England, L.	80	3.80	3.78
Dever, B.	10	3.00	3.34
Kataska, L. H.	10	3.00	4.30
Boyages, A.	10	4.00	3.48
Ruby, R.	10	3.00	3.88
Pittsford, J.	10	3.80	3.71
Patterson, I. J.	10	4.80	4.18

QUARTILE II

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Newton, H.	10	3.00	2.34
Brousseau, M.	10	2.50	1.88
Gearon, M.	10	3.25	3.91
Blow, M.	10	3.25	3.12
Rego, M.	10	3.25	2.89
Limberakis, E.	10	5.00	4.49
Carney, L.	10	3.00	2.51
Meile, M.	10	4.25	4.06
Shea, M.	10	3.25	3.12
Tsotsi, H.	10	3.00	3.45
Van Iderstine, G.	10	2.50	2.71
Viola, M.	10	4.25	3.56
Girdis, E.	10	4.00	4.21
McKenna, R.	10	3.25	3.13
Rourke, D.	10	2.75	2.67
Luna, E.	10	3.75	3.11
Walsh, A.	10	3.00	2.56
McVarish, E.	10	3.00	3.09
Volpe, E.	10	3.75	3.21

QUARTILE II

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
O'Hara, M.	10	3.00	2.68
Schrage, R.	10	3.25	3.53
Marsie, J.	10	3.75	2.86
Park, C.	10	1.00	1.31
Counaris, K.	10	3.50	3.93
Cotter, R.	10	3.00	1.48
Cordiero	10	3.00	2.70
Tyschok, N.	10	3.75	3.91
Catanzano, C.	10	2.00	2.19
McCarthy, M.	10	3.00	2.30
McMahon, R.	10	3.00	2.90
Campo, L.	10	4.00	3.55
Doherty, E.	10	5.00	3.83
Kearns, D.	1-10	3.00	2.49
DiCicco, L.	1-10	2.50	2.69
Casdia, H.	1-10	3.00	2.92
DiSarcina, T.	1-10	3.25	3.20
Salisbury, G.	1-10	3.00	2.67
Zona, V.	1-10	3.75	3.32

QUARTILE II

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Wallace, D.	1-10	4.75	3.78
MacAuley, B.	1-10	3.00	3.03
Pratt, F.	1-10	3.00	2.21
Cavazzi, M.	1-10	4.00	4.30
Yocco, V.	1-10	4.00	3.63
Korsmehlaka, B.	1-10	3.00	4.78
Dura, S.	1-10	3.75	3.72
Dyer, R.	1-10	3.00	3.25
Galdi, G.	1-10	3.00	3.43
Bisilla, F.	1-10	3.00	3.43
Agrestis, M.	1-10	3.25	3.23
Sanke, B.	1-10	4.00	4.43
Flawing, F.	1-10	4.00	3.54
Casparato, R.	1-10	3.75	3.72
Crooks, D.	1-10	3.00	3.30
Brano, L.	1-10	3.50	3.54
Shook, S.	1-10	3.50	4.09
Souza, D.	1-10	3.50	3.91
Zeiss, B.	1-10	3.33	4.42

QUARTILE II

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Wallace, D.	1-10	4.75	3.75
MacGillivray, B.	1-10	3.00	3.53
Pratt, F.	1-10	3.00	3.81
Gavazzi, M.	1-10	4.00	4.30

QUARTILE I

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Halloran, F.	1-10	3.50	3.37
Asplund, D.	1-10	4.00	4.31
De Feo, O.	1-10	3.00	4.66
Santoro, C.	1-10	3.25	3.39
Tseko, V.	1-10	4.00	3.63
Korzemeioska, S.	1-10	5.00	4.78
Duva, E.	1-10	3.75	3.72
Dwyer, R.	1-10	3.00	2.25
Galdi, G.	1-10	3.00	2.43
DiMilla, F.	1-10	3.50	3.43
Agresti, M.	1-10	3.25	3.23
Banks, B.	1-10	4.50	4.48
Flemming, P.	1-10	4.00	2.64
Cammarata, R.	1-10	3.75	3.72
Croke, D.	1-10	3.00	3.28
Bruno, L.	1-10	3.25	3.54
Snook, E.	1-10	3.25	4.09
Souza, D.	1-10	3.50	3.91
Lees, B.	1-10	3.50	2.42

QUARTILE I

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Hallock, F.	1-10	3.50	3.37
Asplund, D.	1-10	4.00	4.31
De Pac, O.	1-10	3.00	4.66
Santoro, G.	1-10	3.25	3.39
Taske, V.	1-10	4.00	3.63
Korzeniewska, S.	1-10	3.00	4.78
Davis, S.	1-10	3.75	3.75
Dwyer, R.	1-10	3.00	3.25
Galdi, G.	1-10	3.00	3.43
Dimitis, F.	1-10	3.50	3.43
Agrasti, M.	1-10	3.25	3.25
Banks, B.	1-10	4.50	4.48
Flemming, P.	1-10	4.00	3.64
Gammata, R.	1-10	3.75	3.75
Croke, D.	1-10	3.00	3.28
Bruno, L.	1-10	3.25	3.54
Shook, E.	1-10	3.25	4.09
Sowa, D.	1-10	3.50	3.91
Lees, S.	1-10	3.50	3.43

QUARTILE I

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Morris, D.	1-10	2.25	2.24
Anastasi, P.	1-10	3.00	3.26
Alberto, V.	1-10	3.25	2.54
Cella, L.	1-10	3.00	3.09
Salapante, M.	1-10	2.75	2.12
Breton, L.	1-10	3.25	3.81
Recupero, N.	1-10	3.00	3.24
Agostino, A.	1-10	1.25	1.90
McNeill, M.	1-10	3.00	2.67
Fraser, E.	1-10	2.75	2.10
Naughton, C.	1-10	3.00	2.36
Biffano, J.	1-10	1.75	2.36
Gibbons, F.	1-10	3.75	3.21
Caslellano, R.	1-10	3.00	3.20
Langein, F.	1-10	2.50	2.01
Lowe, F.	1-10	1.75	2.04
Cosgrove, M.	1-10	3.00	3.24
Coughlin, M.	1-10	4.00	3.05
Solimine, R.	1-10	1.75	3.54

QUARTILE I

Name	Reading Percentile Grade 3	English Average Grade 10	Scholastic Rating Grade 10
Morris, D.	1-10	2.25	2.24
Anastasi, P.	1-10	2.00	2.26
Alberto, V.	1-10	2.25	2.24
Gella, L.	1-10	2.00	2.09
Salapante, M.	1-10	2.75	2.12
Bretton, L.	1-10	2.25	2.21
Reynolds, W.	1-10	2.00	2.24
Agostino, A.	1-10	1.25	1.90
McNeill, M.	1-10	2.00	2.27
Fraser, E.	1-10	2.75	2.10
Wangston, C.	1-10	2.00	2.26
Bilano, J.	1-10	1.75	2.26
Gibbons, F.	1-10	2.75	2.21
Casellano, R.	1-10	2.00	2.20
Langein, F.	1-10	2.50	2.01
Lowe, F.	1-10	1.75	2.04
Cosgrove, M.	1-10	2.00	2.24
Coughlin, M.	1-10	4.00	2.02
Solimine, R.	1-10	1.75	2.24

QUARTILE I

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Barnes, R.	1-10	2.50	2.25
Bryant, P.	1-10	4.00	3.87
Draghi, R.	1-10	2.50	2.16
Delle Dome, E.	1-10	3.25	2.29
Malone, M.	1-10	2.25	1.30
Fedele, C.	1-10	3.25	3.58
Hayes, M.	1-10	2.25	2.13
McDonnell, V.	1-10	1.75	1.99
Ewert, E.	1-10	0.50	1.26
Cowan, D.	1-10	2.75	2.44
Cadoury, A.	1-10	2.75	1.91
Holmes, J.	1%	3.00	2.67
Beckett, F.	1% Below	3.00	1.83
Campos, I.	1% Below	1.25	2.76
Shea, J.	1% Below	2.25	1.79
Chapman, D.	1% Below	2.75	2.15
Tseko, A.	1% Below	2.25	2.23

QUARTILE I

Name	Reading Percentile Grade 9	English Average Grade 10	Scholastic Rating Grade 10
Barnes, R.	1-10	2.50	2.25
Bryant, P.	1-10	4.00	2.87
Brighi, R.	1-10	2.50	2.46
Delia Doms, E.	1-10	2.25	2.29
Malone, M.	1-10	2.25	1.30
Fedele, C.	1-10	2.25	2.56
Hayes, M.	1-10	2.25	2.13
McDonnell, V.	1-10	1.75	1.99
Swert, E.	1-10	0.50	1.28
Cowan, D.	1-10	2.75	2.44
Gaboury, A.	1-10	2.75	1.91
Holmes, J.	IX	3.00	2.87
Backett, P.	IX Below	3.00	1.83
Campos, I.	IX Below	1.25	2.76
Shan, J.	IX Below	2.25	1.79
Chapman, D.	IX Below	2.75	2.15
Taeko, A.	IX Below	2.25	2.23

SUMMARY OF RESULTS

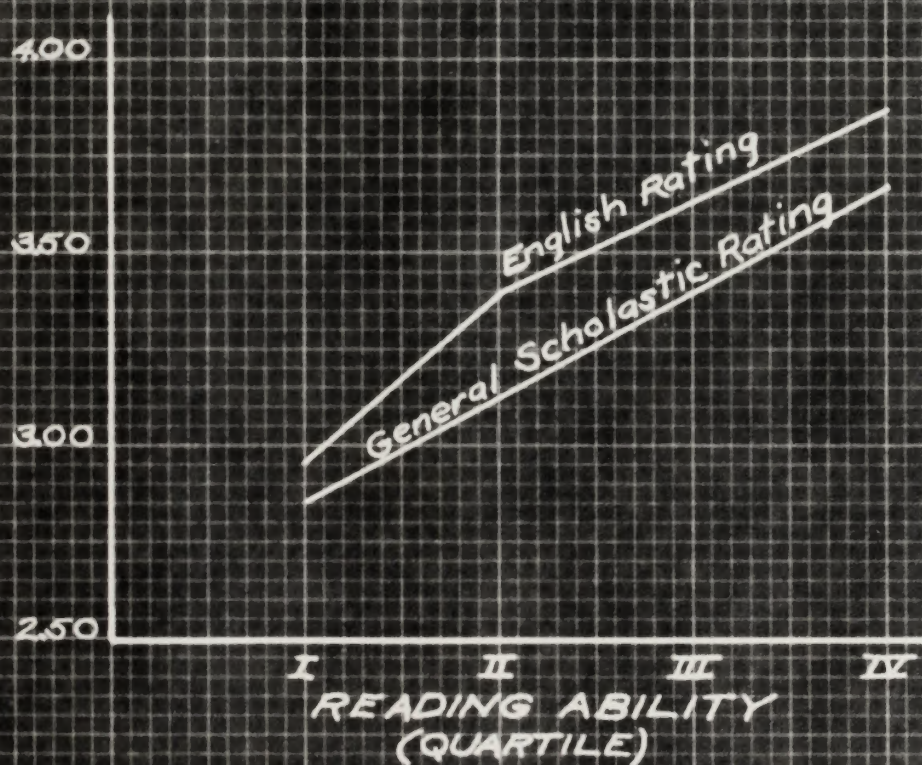
Reading Quartile	Number of Pupils	English Rating (Grade 10)	General Scholastic Rating (Grade 10)
IV	58	3.87	3.65
III	66	3.65	3.35
II	61	2.41	3.14
I	55	2.95	2.87

Total Number of Pupils	240
Average English Rating	3.48
Average Scholastic Rating	3.26

Summary of Results

Reading Quartile	Number of Pupils	English Rating (Grade 10)	General Scholastic Rating (Grade 10)
IV	53	3.87	3.65
III	66	3.65	3.33
II	61	3.41	3.14
I	53	3.35	2.87

Total Number of Pupils	240
Average English Rating	3.48
Average Scholastic Rating	3.26



A COMPARISON OF READING ABILITY
AND SCHOLASTIC ACHIEVEMENT
FOR 300 HIGH SCHOOL SOPHOMORES

Katherine D. Crotty

ANALYSIS OF RESULTS

The results show that the pupils who were in the lowest quartile in all-around reading ability were definitely the lowest in both English and general scholarship. The picture would be even worse for this group if those pupils who dropped out of school after completion of the ninth grade, and those who left during the year in the tenth grade were taken into consideration.

By far the largest percentage of the fifty-odd pupils unaccounted for, from the original group of about 300, came from this quartile.

The only cases entering into the tabulation are those who finished the entire tenth year.

The second and third quartiles in reading ability were likewise second and third in English and general scholarship. In these two groups combined, fewer pupils failed to complete the tenth grade than was the case in quartile I. However, quartile II showed a considerably greater loss than quartile III.

The fourth or highest quartile remained almost intact throughout the tenth grade. As a group their English average of 3.87 was very near to honor grades, (B or above). Individually, most of these pupils did receive honor grades.

In general scholarship the quartile average of 3.65 was highly satisfactory. Many of the pupils achieved the Credit List (all B's and A's) and several the Maximum Credit List (all A's).

Non-promotion as a consequence of tenth grade scholarship followed the same general trend, the largest number being found in the first quartile and practically none in the top quartile.

The graph of General Scholarship against Reading Ability, as nearly as it can be plotted, is a straight line. This indicates that general scholastic achievement varies directly with reading ability.

English marks in general for the entire group as shown in the graph, were considerably higher than the combined marks in all studies. This graph is not a straight line but it does show a distinct rise for each of the three upper quartiles over the next lower one.

Analysis of individual records show that, with almost no exceptions, a pupil low in reading ability makes a poor record in English. The average English mark for the lowest quartile as shown by this project is 2.93, less than the lowest satisfactory grade of 3.

CONCLUSIONS

1. Success in secondary school work is directly proportional to reading ability.

This is the most important fact brought out by the investigation. It accomplishes the main purpose of the project, namely the determination of whether or not any correlation exists between reading ability and scholastic accomplishment.

2. English marks in high school vary with reading ability.

This variation is not a straight line function as is general scholarship, but it is a very definite indication that notable success in English is nearly always accompanied by good general ability in reading.

3. Poor reading ability usually results in unsatisfactory records in English.

Analysis of individual records show that, with almost no exceptions, a pupil low in reading ability makes a poor record in English. The average English mark for the lowest quartile as shown by this project is 2.95, less than the lowest satisfactory grade of C.

4. English marks in high school run considerably higher than the average marks for all subjects combined.

This is clearly shown by the graph of results. It is most conspicuous for the average pupil, that is, the pupils in quartile II and III.

PART II

AN ANALYSIS OF READING

DIFFICULTIES AMONG BEGINNERS AT

SEMPERVILLE HIGH SCHOOL AND

COMPARISON OF FOUR HISTORY

CLASSES ON THE BASIS OF READING

ABILITY

EXTENSIVE EMPLOYED

Standard reading tests were given to 180 high school sophomore pupils to ascertain what the reading difficulties were and to what extent they existed in different types of classes. Intelligence tests were also given to these same pupils.

The results for each class were tabulated and a graph was plotted for each of the four classes on the same set of co-ordinate axes. This PART II was at a glance the relative standings of the groups in reading ability.

AN ANALYSIS OF READING

YEARS USED

DIFFICULTIES AMONG SOPHOMORES AT

The tests SOMERVILLE HIGH SCHOOL AND A

ing Tests and COMPARISON OF FOUR HISTORY Tests of Reading

ability. CLASSES ON THE BASIS OF READING

The Iowa Test is of ABILITY in six subjects, each of which is designed to show strength of weakness on the part of the pupil in the following phases of reading:

1. Rate of Reading and Comprehension
2. Directed Reading
3. Word Meaning
4. Paragraph Comprehension
5. Sentence Meaning
6. Location of Information by Alphabetical and Use of Index

METHOD EMPLOYED

Standard reading tests were given to 120 high school sophomore pupils to ascertain what the reading difficulties were and to what extent they existed in different types of classes. Intelligence tests were also given to these same pupils.

The results for each class were tabulated and a graph was plotted for each of the four classes on the same set of co-ordinate axes. This graph shows at a glance the relative standings of the groups in reading ability.

TESTS USED

The tests used in this study were the Iowa Silent Reading Tests and the Otis Self-Administering Tests of Mental Ability.

The Iowa Test is divided into six subtests, each of which is designed to show strength or weakness on the part of the pupil in the following phases of reading:

1. Rate of Reading and Comprehension
2. Directed Reading
3. Word Meaning
4. Paragraph Comprehension
5. Sentence Meaning
6. Location of Information by Alphabetizing and Use of Index

The Otis test is self-administering as its name implies. That is to say, after general instructions are given to the class, no further activity on the part of the administrator is necessary. No questions may be asked by the pupils and they continue working until the allowed time of thirty minutes has elapsed.

Samples of both tests are included in this report.

PROCEDURE

Four sophomore history classes were selected for administration of the tests. No effort was made to have similar classes, the only basis of selection was convenience and teacher cooperation. The four classes chosen recited during the same period and the teachers of these classes displayed a live interest in the possibilities of the undertaking.

Two of the classes were studying Ancient History, the other two Early American History. In accordance with the prescribed course of studies in the school, College Preparatory students are required to take Ancient History and General students take Early European History.

This meant, insofar as the tests were concerned, that a wide range of abilities would be represented in the results.

The College Preparatory groups are selected to a considerable extent, whereas any pupil in the school may take the General Course. However, in both courses classes are grouped insofar as is convenient on the basis of previous records. Consequently it could be reasonably expected that the results would show some of the best readers and some of the worst readers in the school. Between the two extremes there would, no doubt, be a rather well distributed range.

The tests were administered in the regular recitation rooms of the classes and since every pupil took the tests there was no undue alarm in the minds of the pupils as to their purpose. The particular reading test used required two class periods to administer, but since the test is divided into six distinct parts this did not create any problem. A logical stopping point was chosen for the first period and no confusion resulted when the test was continued the next day.

The intelligence tests required only thirty minutes and consequently one class period was ample for their administration.

RESULTS
IOWA SILVER READING TESTS
NEW EDITION
GRADE 10

Spencer High School Grade 10.2 Form 22

Student's No. Age IQ Grade Equivalent

1 13-6 125 11.5

2 14-1 113 9.8

3 13-2 120 10.5

4 13-3 117 11.2

5 13-4 115 11.0

6 14-0 118 12.0

7 13-5 115 12.0+

8 13-1 112 12.0+

9 13-4 110 12.3

10 14-0 114 9.4

11 13-3 111 11.5

12 13-2 113 12.0+

13 13-4 107 12.5+

14 14-0 111 9.2

15 13-3 115 12.0+

16 13-1 101 10.2

17 13-2 100 9.3

18 13-2 81 8.8

TABLE OF
READING GRADES
AND INTELLIGENCE
QUOTIENTS

RESULTS

IOWA SILENT READING TESTS

NEW EDITION

GROUP I

Somerville High School

Grade 10.2

Form BM

Student's No.	Age	IQ	Grade Equivalent
1	15-5	113	11.3
2	14-1	113	9.2
3	15-2	113	10.3
4	15-4	110	11.2
5	15-2	113	11.6
6	14-5	103	12.0
7	15-5	118	12.0+
8	18-1	112	12.0+
9	15-4	110	11.1
10	14-0	114	9.4
11	15-3	111	11.3
12	15-3	113	12.0+
13	15-4	107	12.0+
14	14-8	111	9.8
15	18-8	115	12.0+
16	16-1	101	10.8
17	15-2	100	7.5
18	15-2	81	7.5

GROUP I - CONTINUED

IOWA SILENT READING TESTS

Student's No.	Age	IQ	Grade Equivalent
19	15-4	116	12.0+
20	15-10	99	9.8
21	15-6	110	9.4
22	18-6	111	12.0+
23	15-4	107	7.8
Medians	15-4	113	11.1
2	15-4	101	8.0
3	15-3	104	8.2
4	15-4	103	8.4
5	15-10	98	8.0
6	14-7	100	8.0
7	15-6	100	8.4
8	15-10	87	6.0
9	14-10	114	11.4
10	15-3	91	8.8
11	17-7	105	12.0+
12	15-8	95	8.0
13	15-10	94	8.0
14	16-3	107	11.2
15	14-3	110	10.6
16	15-10	93	8.2
17	17-0	103	9.8

RESULTS
IOWA SILENT READING TESTS

NEW EDITION

GROUP II

Somerville High School Grade 10.2 Form BM

<u>Student's No.</u>	<u>Age</u>	<u>IQ</u>	<u>Grade Equivalent</u>
1	15-1	94	8.7
2	15-9	99	9.8
3	15-4	101	9.0
4	15-8	102	8.2
5	15-7	103	9.4
6	15-10	98	9.0
7	14-7	100	12.0
8	15-2	100	9.4
9	15-10	87	6.0
10	14-10	114	11.6
11	15-3	91	8.6
12	17-7	105	12.0+
13	15-8	95	9.0
14	15-10	94	8.8
15	16-3	107	11.3
16	14-8	110	10.8
17	15-10	98	8.2
18	17-0	103	9.6

RESULTS

IOWA SILENT READING TESTS

NEW EDITION

GROUP II

Somerville High School Grade 10.2 Form BM

Student's No.	Age	IQ	Grade Equivalent
1	15-1	94	8.7
2	15-9	99	9.3
3	15-4	101	9.0
4	15-8	102	9.2
5	15-7	103	9.4
6	15-10	98	9.0
7	14-7	100	12.0
8	15-2	100	9.4
9	15-10	87	8.0
10	14-10	114	11.6
11	15-3	91	8.6
12	17-7	108	12.0
13	15-8	95	9.0
14	15-10	94	8.8
15	16-3	107	11.3
16	14-8	110	10.8
17	15-10	98	8.8
18	17-0	108	9.6

GROUP II - CONTINUED

Student's No.	Age	IQ	Grade Equivalent
19	14-3	114	11.3
20	16-3	84	9.0
21	14-7	100	7.6
22	14-11	96	7.8
23	17-4	101	11.3
24	15-3	108	12.0+
Medians	15-5	103	9.5
1	15-2	97	10.1
2	15-2	102	9.5
3	15-3	90	9.3
4	15-1	95	8.5
5	15-7	89	8.5
6	15-8	102	10.3
7	15-1	110	11.1
8	15-8	105	10.1
9	14-10	95	9.1
10	14-10	85	7.5
11	15-10	102	9.0
12	14-2	93	8.5
13	15-10	95	9.0
14	15-8	105	9.5
15	15-4	90	9.0

GROUP RESULTS

IOWA SILENT READING TESTS

NEW EDITION

GROUP III

Somerville High School

Grade 10.2

Form BM

Student's No.	Age	IQ	Grade Equivalent
1	15-10	115	12.0+
2	15-11	110	12.0+
3	14-10	111	11.3
4	16-1	97	10.1
5	15-2	105	7.8
6	18-3	90	9.0
7	16-1	92	8.2
8	16-7	89	8.6
9	15-9	102	10.3
10	15-1	110	11.1
11	16-8	88	10.1
12	14-10	95	7.1
13	16-10	86	7.8
14	15-10	102	9.0
15	16-2	90	8.6
16	15-10	95	9.0
17	15-8	105	9.8
18	16-4	90	7.8

GROUP III - CONTINUED

Student's No.	Age	IQ	Grade Equivalent
19	15-11	101	9.0
20	16-4	98	8.1
21	15-10	106	7.5
22	15-4	100	9.4
23	14-10	96	8.2
24	17-3	80	7.3
25	16-3	88	8.0
26	15-1	97	9.6
27	15-5	109	12.0+
28	16-10	106	12.0+
29	16-3	110	12.0+
30	15-9	92	5.7
31	15-0	112	11.1
32	15-11	101	10.1
33	15-10	105	9.2
34	15-11	108	9.8
35	16-1	93	9.0
36	17-9	86	9.2
37	15-10	110	9.8
Medians	15-11	102	9.4

RESULTS

IOWA SILENT READING TESTS

NEW EDITION

GROUP IV

Somerville High School

Grade 10.2

Form BM

Student's No.	Age	IQ	Grade Equivalent
1	16-0	92	8.6
2	16-3	102	9.6
3	14-11	115	12.0+
4	16-3	80	5.9
5	15-1	111	11.5
6	15-4	104	9.2
7	15-6	100	7.8
8	15-10	95	6.8
9	16-8	78	6.0
10	16-0	98	7.8
11	16-11	99	9.6
12	15-9	103	9.2
13	15-9	100	9.2
14	15-11	90	8.4
15	16-2	101	8.6
16	15-1	105	9.0
17	15-9	100	9.0
18	15-10	109	10.6

GROUP IV - CONTINUED

Student's No.	Age	IQ	Grade Equivalent
19	17-5	90	9.0
20	15-10	98	8.4
21	15-1	114	11.1
22	16-1	93	9.6
23	16-5	92	9.8
24	16-4	84	7.5
25	17-2	77	5.6
26	15-7	99	9.0
27	16-6	94	8.2
28	16-11	103	10.8
29	15-10	92	8.0
30	15-11	98	9.0
31	15-10	115	12.0+
32	16-11	80	6.8
33	16-8	86	8.0
34	16-9	109	12.0+
35	16-10	102	9.6
Medians	16-0	101	9.1

TABLE OF
SUBTEST SCORES
IOWA SILENT READING TEST

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IOWA SILENT READING TESTS

NEW EDITION

SUBTEST SCORES

GROUP I

Somerville High School Grade 10.2 Form BM

Student's No.	Averages					
	1	2	3	4	5	6
1	82.5	76	86	86.0	69	68.0
2	63.5	89	72	68.0	66	82.5
3	70.0	84	85	70.0	72	78.5
4	48.5	65	78	56.0	41	63.4
5	75.0	86	90	82.0	62	77.5
6	64.0	74	85	76.5	92	86.5
7	66.5	94	85	89.5	72	84.5
8	65.5	94	97	82.0	100	80.5
9	63.0	83	81	74.0	110	82.5
10	60.5	76	77	70.0	72	66.0
11	77.0	94	81	86.0	77	70.5
12	73.5	92	85	73.5	92	82.5
13	82.5	94	86	82.0	100	84.5
14	66.0	86	76	70.0	69	84.5
15	67.0	97	83	80.0	100	80.5
16	79.0	89	79	66.0	48	74.0
17	48.5	67	77	58.0	43	63.5
18	51.5	64	65	57.5	48	82.5

IOWA SILENT READING TESTS

NEW EDITION

SUBTEST SCORES

GROUP I

Somerville High School		Grade 10.2		Form BM	
Student's No.	1	2	3	Average	
				4	5
1	82.5	78	80	80.0	80.0
2	83.5	89	72	83.0	82.5
3	70.0	84	82	70.0	78.5
4	48.5	65	78	58.0	63.4
5	75.0	86	90	82.0	77.5
6	64.0	74	82	78.5	66.5
7	66.5	94	82	89.5	84.5
8	65.5	94	97	83.0	80.5
9	63.0	88	81	74.0	82.5
10	60.5	76	77	70.0	66.0
11	77.0	94	81	86.0	70.5
12	73.5	93	83	73.5	83.5
13	82.5	94	86	83.0	84.5
14	66.0	86	76	70.0	84.5
15	67.0	97	83	80.0	80.5
16	79.0	89	79	86.0	74.0
17	48.5	67	77	58.0	63.5
18	51.5	64	65	57.5	62.5

SUBTEST SCORES

GROUP I - CONTINUED

Student's No.	Averages					
	1	2	3	4	5	6
19	80.0	94	85	80.0	92	80.0
20	66.5	74	76	74.5	35	72.5
21	69.0	72	79	80.0	69	61.5
22	66.5	84	92	84.0	83	76.0
23	55.0	64	72	62.0	52	78.0
Medians	67	82	82	77	71	80

SUBTEST SCORES
GROUP I - CONTINUED

Student's No.	Averages				
	1	2	3	4	5
19	80.0	94	88	80.0	88
20	66.5	74	76	74.5	78.5
21	69.0	75	79	80.0	81.5
22	66.5	84	82	84.0	78.0
23	55.0	64	73	68.0	78.0
Median	67	83	88	77	71
					80

IOWA SILENT READING TESTS

NEW EDITION

SUBTEST SCORES

GROUP II

Somerville High School Grade 10.2 Form BM

Student's No.	Averages					
	1	2	3	4	5	6
1	60.5	67	71	62.0	69	68.5
2	75.0	79	76	70.0	62	65.0
3	67.5	89	69	72.0	48	69.5
4	65.0	50	76	64.0	32	66.0
5	70.2	72	86	70.0	44	82.0
6	62.5	68	70	62.0	68	69.5
7	74.0	84	81	80.0	55	82.0
8	66.0	81	86	68.0	45	74.0
9	52.5	48	49	51.5	69	62.5
10	74.5	91	85	85.5	55	86.5
11	63.0	84	81	62.0	55	70.5
12	67.0	89	90	74.0	92	53.0
13	60.5	74	69	64.0	69	75.5
14	54.4	50	48	52.5	68	63.5
15	75.0	83	85	62.0	48	82.0
16	59.5	77	76	78.5	45	82.0
17	68.5	60	77	68.0	62	62.0
18	70.0	74	85	70.0	45	82.0

IOWA SILENT READING TESTS

NEW EDITION

SUBTEST SCORES

GROUP II

Somerville High School		Grade 10's				Form BM	
Student's No.	Averages					6	
	1	2	3	4	5		
1	60.5	67	71	63.0	69	63.5	
2	72.0	79	78	70.0	63	65.0	
3	67.5	69	69	72.0	48	69.5	
4	65.0	50	78	64.0	33	66.0	
5	70.3	73	66	70.0	44	63.0	
6	62.5	68	70	69.0	68	69.5	
7	74.0	84	81	80.0	55	63.0	
8	66.0	61	66	68.0	45	74.0	
9	52.5	48	49	51.5	69	62.5	
10	74.5	91	85	82.5	55	66.5	
11	63.0	64	81	65.0	53	70.5	
12	67.0	69	90	74.0	92	54.0	
13	60.5	74	69	66.0	69	73.5	
14	54.4	50	48	56.5	68	63.5	
15	75.0	83	85	62.0	43	83.0	
16	59.5	77	78	73.5	45	83.0	
17	63.5	60	77	69.0	63	63.0	
18	70.0	74	85	70.0	45	83.0	

IOWA SUBTEST SCORES 1973

GROUP II - CONTINUED

Student's No.	Averages					
	1	2	3	4	5	6
19	68.5	84	81	75.5	62	84.5
20	72.5	74	69	61.5	69	57.0
21	56.5	67	77	56.0	77	57.0
22	72.5	86	85	74.0	55	72.5
23	60.5	89	83	78.5	25	84.5
24	84.5	84	97	88.0	77	82.5
Medians	67.0	80	80	69.0	54	75.0

IOWA SILENT READING TESTS

NEW EDITION

SUBTEST SCORES

GROUP III

Somerville High School Grade 10.2 Form BM

Student's No.	Averages					
	1	2	3	4	5	6
1	65.5	84	83	81.0	69	86.5
2	79.5	94	90	91.5	69	84.5
3	65.5	91	79	79.5	69	84.5
4	55.0	66	62	66.0	78	77.5
5	58.5	66	68	64.0	66	82.5
6	56.0	84	72	66.0	45	80.0
7	55.0	78	70	66.0	64	86.5
8	51.0	84	60	71.5	62	78.0
9	62.0	79	79	70.0	66	79.5
10	82.0	81	74	70.0	40	82.5
11	68.0	74	81	73.5	48	75.5
12	55.0	57	60	51.5	69	67.5
13	65.5	74	60	75.5	43	75.5
14	55.0	79	72	64.0	66	86.5
15	60.0	71	79	74.0	77	71.5
16	62.5	69	65	60.0	55	65.0
17	68.0	86	68	64.0	77	86.5
18	56.0	60	69	43.0	66	76.0

SUBTEST SCORES
GROUP III - CONTINUED

Student's No.	Averages					
	1	2	3	4	5	6
19	82.0	81	74	70.0	40	82.5
20	65.5	91	79	79.5	69	84.5
21	63.2	80	75	64.0	46	72.0
22	55.0	74	66	72.0	69	75.5
23	62.0	84	65	64.0	48	80.5
24	55.0	79	72	64.0	66	86.5
25	62.5	69	65	60.0	55	65.0
26	58.5	71	81	72.0	66	82.5
27	82.0	88	90	95.5	92	69.5
28	65.5	81	76	68.0	92	60.0
29	62.0	79	74	68.0	69	76.0
30	54.5	52	63	43.5	35	46.5
31	76.0	91	81	75.5	63	80.5
32	69.0	77	71	57.5	83	80.5
33	68.5	84	79	74.0	48	67.5
34	75.5	83	71	76.0	66	80.5
35	63.0	81	74	66.0	46	72.5
36	67.5	83	74	64.0	72	68.0
37	60.0	71	79	74.0	77	71.5
Medians	64	80	72	68	66	78

SUBTEST SCORES
GROUP III - CONTINUED

Student's No.	1	2	AVERAGES			3
			3	4	5	
19	63.0	61	74	70.0	40	82.5
20	62.5	61	73	72.5	39	84.5
21	63.2	60	75	64.0	48	72.0
22	55.0	74	66	72.0	69	72.5
23	62.0	64	65	64.0	48	80.5
24	55.0	73	72	64.0	66	66.5
25	62.5	69	65	60.0	55	62.0
26	58.5	71	61	72.0	66	82.5
27	62.0	68	90	92.5	92	69.5
28	65.5	61	76	68.0	92	60.0
29	62.0	79	74	62.0	69	76.0
30	54.5	52	63	43.5	35	46.5
31	76.0	61	61	72.5	62	80.5
32	69.0	77	71	57.5	83	80.5
33	62.5	64	79	74.0	48	67.5
34	75.5	63	71	76.0	66	80.5
35	63.0	61	74	62.0	46	73.5
36	67.5	65	74	64.0	73	69.0
37	60.0	71	79	74.0	77	71.5
Mediana	64	60	72	69	66	78

IOWA SILENT READING TESTS

NEW EDITION

SUBTEST SCORES

GROUP IV

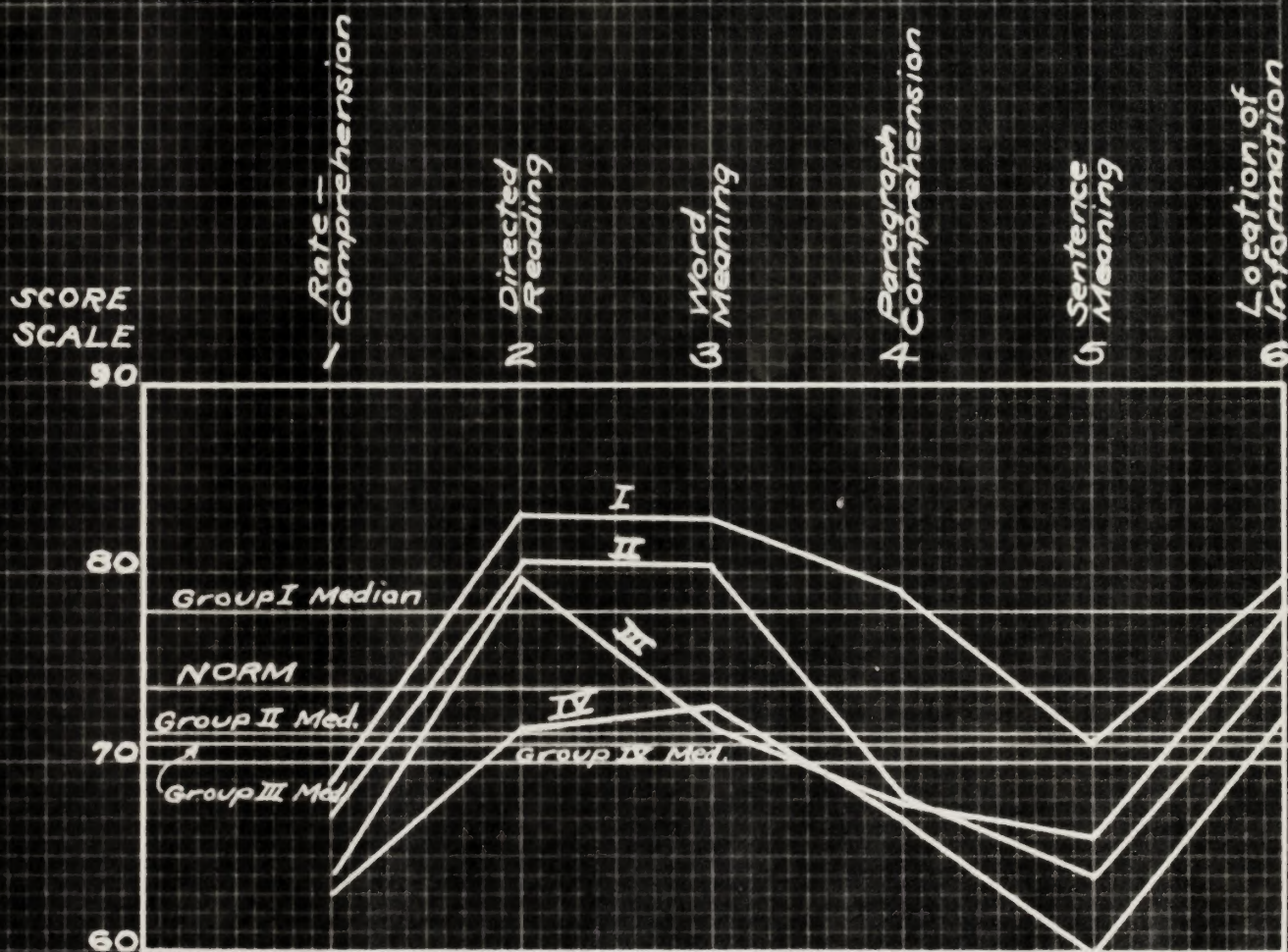
Somerville High School			Grade 10.2		Form BM	
Student's No.	Averages					
	1	2	3	4	5	6
1	62.0	79	65	68.0	55	83.5
2	60.5	76	68	66.0	92	82.5
3	79.5	94	86	82.0	92	82.5
4	46.5	53	66	55.5	48	46.5
5	78.0	94	83	82.0	59	84.5
6	65.5	72	83	68.0	62	76.0
7	55.0	60	65	62.0	66	63.0
8	55.0	55	77	51.5	59	64.5
9	53.5	50	49	56.0	48	50.0
10	60.5	72	70	68.0	90	82.5
11	54.0	86	76	68.0	35	76.5
12	69.5	81	62	55.5	69	75.5
13	63.5	62	83	72.0	92	67.0
14	64.0	77	80	72.0	64	78.0
15	55.0	62	68	62.0	64	65.0
16	60.5	77	79	92.0	43	34.0
17	67.0	71	71	64.0	92	59.5
18	66.0	79	83	72.5	62	78.0

SUBTEST SCORES
GROUP IV - CONTINUED

Student's No.	Averages					
	1	2	3	4	5	6
19	71.0	67	74	74.0	62	49.5
20	72.0	57	68	74.0	52	63.5
21	61.5	83	81	75.5	62	80.0
22	57.5	72	71	74.5	62	79.5
23	65.0	74	68	72.0	83	73.5
24	59.5	62	71	62.0	55	57.5
25	42.5	52	58	45.5	25	59.5
26	60.5	71	79	66.0	78	73.5
27	70.0	65	72	74.0	68	70.0
28	64.5	79	81	74.0	48	82.0
29	66.0	88	70	72.0	86	75.0
30	64.0	74	73	69.0	60	74.0
31	85.0	84	86	73.5	110	79.5
32	57.0	57	71	60.0	55	48.5
33	55.5	79	72	71.5	41	55.0
34	81.0	89	92	68.0	110	80.5
35	66.0	92	65	74.5	92	70.0
Medians	63	72	73	68	60	72

SUBTEST SCORES
GROUP IV - CONTINUED

Student's No.	Averages				
	1	2	3	4	5
19	71.0	67	74	74.0	68
20	72.0	57	68	74.0	52
21	61.5	63	61	75.5	62
22	57.5	72	71	74.5	62
23	65.0	74	68	72.0	63
24	59.5	62	71	62.0	55
25	48.5	52	52	45.5	52
26	60.5	71	72	66.0	78
27	70.0	65	72	74.0	63
28	64.5	72	61	74.0	48
29	66.0	62	70	72.0	66
30	64.0	74	73	69.0	60
31	62.0	64	66	72.5	110
32	57.0	57	71	60.0	52
33	55.5	72	72	71.5	41
34	61.0	62	92	68.0	110
35	66.0	92	62	74.5	92
Medians	62	72	73	68	60



Katherine D. Dötty

GROUP RESULTS AND MEDIAN
IOWA SILENT READING TESTS

DISCUSSION OF RESULTS

The results were in accord with what was expected of the four groups as classes. The median reading grade equivalent of Group I was 11.1 or nine months advanced. This was one of the college preparatory classes in ancient history which according to teacher's estimated was an excellent one.

Group II was one of the poorer preparatory sections and the median reading grade equivalent was found to be 9.5 or seven months retarded. This group was made up of pupils who insisted on remaining in the preparatory course in spite of past failures.

Group III showed widely scattered reading grades among its individual members. They ranged from 5.7 to 12+. This group was a heterogeneous mixture of general and commercial course pupils. The class median was 9.4.

The lowest in reading ability of the four classes was Group IV composed almost entirely of general course pupils. Its class median reading grade equivalent was 9.1. All but five of this class were retarded in reading ability. The grade equivalents ranged from 5.6 to 12+.

The median Intelligence Quotients for each of the four groups likewise turned out as was expected, the highest being Group I. In this class, more than half of the pupils were above 110 and only two were below 100.

With Group IV the results were just reversed. More than half of the class was below 100 and only four were above 110. Group II and III showed the same relative standings in intelligence as in reading ability.

It was noticeable that in every case of marked excellence in reading ability, the IQ was relatively high. However, the converse was not found to be true. Several pupils of exceptional intelligence displayed comparatively poor reading ability.

SUBTEST RESULTS

Analyzing the graph of the four groups, as represented on one set of co-ordinate axes, it is seen that all four follow the same general outline. In rate of reading and comprehension all of the classes are retarded noticeably. Word meaning and directed reading show satisfactory results. The results on paragraph comprehension are poor for all but Group I. In every case ability to comprehend sentence meaning as shown by subtest #5 is decidedly weak.

All of the groups demonstrated a very satisfactory knowledge of the use of the index and alphabetizing in subtest #6. This was very interesting because of the experiences of the Belmont and Newton schools where the Iowa Reading Test has been used in large numbers in recent years.

Their results showed that the one general weakness in both of those towns is inability to locate information by use of the index.

In seeking an explanation of the difference between Somerville pupils and those of the other two schools on this particular subtest, I found that in Somerville all pupils in the Junior High Schools are brought to libraries and instructed in the methods of locating information through catalogues, indexes and guides of various sorts. Each pupil is then given a mimeographed sheet containing actual problems which he is required to look up for himself as an out-of-school assignment. These sheets are carefully corrected and individual pupils are given any further instructions which seem necessary to a clear understanding of the method.

In Belmont and Newton no such regular instruction was provided in the past. In the light of the test results in the Belmont High School the problem was turned over to the English department for a remedy. The conclusions reached after considerable study were to provide for just such a program of instruction in the location of information as the Somerville schools have practiced for several years. Newton likewise has taken steps to familiarize its pupils with the proper use of the index and the dictionary.

CONCLUSIONS

1. The chief reading difficulties among Somerville High School sophomores is inability to read with proper comprehension at a satisfactory rate, and weakness in grasping sentence meanings.

All four of the groups tested were decidedly below the norms in these two subtests.

2. Most sophomore pupils have difficulty in getting the main idea of a paragraph.

Only one of the four groups were above the norm in this respect.

3. In general, the pupils tested show satisfactory command of vocabulary.

Two of the classes were well above the norm in word meaning and the other two classes were only slightly below the norm.

4. The average sophomore is able to locate information by the use of an index very satisfactorily.

Three of the classes were above the norm on this subtest and the fourth was very near to it.

5. Good reading ability accompanies success in scholarship.

The most carefully selected class was the highest in reading ability and the other three arranged themselves in the same relative order in reading ability as in scholarship. This confirms the results determined by Part I of this thesis, namely, that success in scholarship varies with reading ability.

8. To complement the results of such a reading test,

intelligence tests should also be given to each pupil.

The results of this research project show that poor reading ability in general accompanies low intelligence. Therefore, it would be a practical impossibility to improve the reading of pupils of sub-normal intelligence to any appreciable extent.

This fact was recognized in the program of remedial work in reading which was begun in the Newton Schools about five years ago. The remedial classes were organized on the basis of intelligence and the results showed this classification to be a good one. In groups of normally intelligent children in junior high school, an average increase in reading age of eleven months was accomplished during a year

RECOMMENDATIONS

1. A program of testing for reading ability should be put into operation in the Somerville school system.

No such program has ever been attempted officially. The result is that the learning difficulties of pupils because of poor reading have not been generally recognized. Failures in high school in particular would, without doubt, be reduced greatly if remedial work were provided as soon as need for it became known.

2. To complement the results of such a reading test, intelligence tests should also be given to each pupil.

The results of this research project show that poor reading ability in general accompanies low intelligence. Therefore, it would be a practical impossibility to improve the reading of pupils of sub-normal intelligence to any appreciable extent.

This fact was recognized in the program of remedial work in reading which was begun in the Newton Schools about five years ago. The remedial classes were organized on the basis of intelligence and the results showed this classification to be a good one. In groups of normally intelligent children in junior high school, an average increase in reading age of eleven months was accomplished during a four

months period. The pupils of sub-normal intelligence did not show any such improvement. In fact, some of them were even further retarded in reading after being given remedial work.

3. Remedial reading classes should be provided not later than the first year of junior high school.

Because of the requirements of college entrance, the average high school pupil must devote all of his time to the prescribed curriculum. Any time taken for remedial work in reading would either be an added burden or would necessitate the neglect of some required study.

The argument might be advanced here that a pupil who is seriously retarded in reading should not be considered as college material. This is best answered by the results of a study at Harvard University during the past two years. It was found that a large percentage of all entering freshmen were retarded appreciably in reading ability. These students ranked no doubt very high in mental ability but their success in school work was due to extreme effort because of their handicap.

4. Reading ability should be recognized as one of the most important factors required for success in high school work.

A study of the individual cases in this project shows

that no one whose reading grade was more than two years retarded achieved honor marks in school work. That is to say, such pupils did not qualify for the school "Honor Roll" by their records of the school year 1939-40.

On the other hand, of the pupils tested, every one who showed a reading grade of three or more years retarded was failing in more than one subject. Further, the subjects in which these failures occur most frequently was English, history, and other courses where reading plays a prominent part. Such pupils in many cases do excellent work in such subjects as drawing, manual arts and mathematics.

VALUE OF THIS PROJECT

There is at present a growing and widespread recognition of the fact, so long ignored by educators, that reading ability plays a most important role in a student's scholastic success. Publishers report an increasing demand for reading tests, books on remedial reading, and text books appropriate for pupils of retarded reading ability. Progressive school departments are investigating the problem and even Harvard University has recently begun a study of the situation as it affects entering classes at that institution.

This particular thesis may bring the problem close to home insofar as the Somerville school system is concerned,

and it is quite possible that the effects may be far-reaching in the future. With that aim in mind I have attempted in my work on this project to build up statistical evidence of the need for a program of remedial reading.

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APPENDIX

Sample Tests

NEW YORK
ELECTRICAL BOND

1900

1900

BOND

1900

IOWA SILENT READING TESTS

NEW EDITION

By H. A. GREENE

Director, Bureau of Educational Research and Service, University of Iowa

and V. H. KELLEY

University Appointment Office, University of Arizona, Tucson, Arizona

Median Score	
Grade Equiv.	
Age Equiv.	

Elem.

B_M

(New Edition)

ELEMENTARY TEST : FORM B_M

For Grades 4 to 9

Name..... Age..... Grade.....
Years Months

Sex..... Date..... 19..... Teacher.....
Boy Girl

School..... City and state.....

PROFILE CHART


No.	TEST	RAW SCORE	PART STAND. SCORE	SUBTEST STAND. SCORE
1	Rate-Comprehension Rate A..... + C.....			
	Comprehension B..... + D.....			
2	Directed Reading A..... + B.....		X	
3	Word Meaning A..... + B.....		X	
4	Paragraph Comprehension Central Idea			
	Development B..... + C.....			
5	Sentence Meaning		X	
6	Location of Information Alphabetizing			
	Use of Index			

Score Scale	TEST						Median Score
	1	2	3	4	5	6	
120							
110							
100							
90							
80							
70							
60							
50							
40							
30							
20							
10							
0							

Patent No. 1,586,628

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TEST 1. RATE-COMPREHENSION — PART A

DIRECTIONS. This is a test to see how well and how rapidly you can read silently. Read this story about "Sugar Cane" very carefully so that you can answer questions about it.

At the end of *one minute* you will hear the word "Stop." Put your finger on the word you are reading and wait for further instructions.

SUGAR CANE

Sugar is made from several different kinds of plants. In the United States, sugar cane is one of the important plants from which we get sugar. In the sugar-cane plant, the stalks or canes are jointed like those of the Indian corn. For this reason it is sometimes called a cousin of the Indian corn. The plant grows best in a tropical or very warm climate.

In preparing the land for the planting, it is first plowed. Ridges are then thrown up from six to eight feet apart. A shallow ditch is made in the top of each ridge. Two or three rows of jointed sections cut from the main stalk are laid end to end in this trench. On large plantations machines cover the stalks. In the smaller fields men with hoes do the work.

Several canes bearing grass-like leaves grow from each root. The plants grow rapidly under the heat of the Southern sun. By harvest time they reach a height of from five to twenty feet and a diameter of about two inches. For a number of years the cane will spring up from the same roots, but gradually it

becomes poorer in quality. The old root is then plowed up and new cuttings are planted. Where labor is plentiful, the planting is done each year. In Louisiana the stubble will produce a good crop the second or even the third year.

Harvesting usually begins in October. It is better to let the cane have just as long as possible to grow, for sugar forms in the juice of the cane most rapidly in the latter part of the life of the cane stalk. However, it must be cut before frost injures the quality of the juice in the stalk. When the canes are cut, they are taken in bundles to the mills, where the juice is taken out by running the stalks through heavy rollers. The crushed stalks are used as fuel for the engines which run the mills.

The juice, which is a yellowish-green liquid having a pleasant odor, is then strained and boiled until it thickens. The molasses which we use in our homes is obtained from the first boiling of the juice. Raw sugar is not secured until a more careful refining of the juice has taken place.

Wait for further directions.

Do not answer any of the questions until you are told to do so.

2

←

←

DIRECTIONS. Without looking at the article, answer these questions about the story of "Sugar Cane." You will have *two minutes* for this work. Read each question and the three answers given below. Select the answer you think is correct. Notice the number of this correct answer. In the answer spaces at the right fill in the space under this number. The sample is answered correctly.

SAMPLE. What is the first thing done with the cane at the mill?

1 it is burned 2 it is crushed 3 it is cut

1. In what season of the year is cane usually ready for harvest?

1 Spring 2 Summer 3 Fall

2. How are cane and corn plants similar?

1 jointed stalks 2 height of stalks 3 length of leaves

3. What word describes the odor of the cane juice?

1 sour 2 pleasant 3 unpleasant

4. In what kind of climate does sugar cane grow best?

1 cool 2 temperate 3 very warm

5. The new sugar-cane plant springs from —

1 the seed heads 2 the jointed sections of the stalk 3 the root stalks

6. What is produced as a result of the first boiling of the juice?

1 raw sugar 2 corn syrup 3 molasses

7. At harvest time the cane plants have an average diameter of —

1 one-half inch 2 two inches 3 three inches

8. How is the quality of the cane juice most easily injured?

1 by frost 2 by hot weather 3 by too rapid growth

9. In what section of the United States is sugar cane grown?

1 North 2 South 3 West

10. The cane stubble will produce a good crop for two or three years in the state of —

1 Louisiana 2 Arizona 3 Georgia

Rate. No. Right.

TEST 1. RATE-COMPREHENSION — PART D

DIRECTIONS. Without looking at the article, answer these questions about the story you have just read. You will have *two minutes* for this work.

Read each question carefully. Then fill in the answer space in the margin under the number of the answer you think is right. The sample is answered correctly.

SAMPLE. How did the knight in olden days protect his followers? →

1 by heavy armor 2 by flight 3 by a fortified castle

1. What was the water-filled ditch called which usually surrounded a castle?
1 drawbridge 2 moat 3 canal
2. If the enemy had time he usually preferred to attack the castle by —
1 breaking through the wall 2 undermining the wall 3 starving the defenders
3. Where did knights build their castles in order to prevent an enemy from undermining the walls?
1 on a hill 2 on rocky ground 3 near water
4. From what did the knight and his followers need protection?
1 lawless men 2 wild animals 3 storms
5. A battering-ram was of little use in capturing a castle —
1 built on a hill 2 with very thick walls 3 surrounded by water
6. How did the enemy soldiers cross the moat when attacking a castle?
1 by boats 2 by swimming 3 by filling the moat with stones
7. Why was a large castle usually safe from attack by all but the boldest foes?
1 so strongly fortified 2 brave defenders 3 the king's order
8. What weapons were used by the defenders?
1 towers on wheels 2 battering-rams 3 stones
9. Why did the enemy often dig a tunnel under the wall?
1 to cause the wall to cave in 2 to flood the castle 3 to hide from the defenders
10. Laying siege was a good way to capture a castle because it was —
1 a quick method 2 the easiest way 3 the only successful method

Wait for further directions. Do not answer any of the questions until you are told to do so.

Often the walls were too strong to be broken down by this battering-ram. Then the enemy must use his second method of attack. This meant that he must get to the top of the walls and overpower the defenders. For this purpose a tall wooden tower as high as the castle walls was built and set on rollers. The moat was then filled with rocks and trees to make a roadway. Then the tower, filled with men, was rolled across the moat and up to the wall. The moment it was near the walls, a drawbridge was let fall from the top of the tower to the wall. The attackers rushed across, and the battle was on. Of course, the defenders of the castle were not idle. Heavy stones were hurled upon the tower to wreck it. Often they tried to burn it and the men by throwing blazing tar and pitch upon the tower. Another method of attack was to try to undermine the walls of the castle. If the walls rested on rock, this method of attack was usually not successful. But if the walls were built on soft soil, it was often possible for the enemy to dig an underground passage under the very base of the walls. The top of the passage was supported by heavy beams. These kept the roof from caving in while the digging was going on. Later these beams were set on fire, with the result that the top of the passageway would fall in and with it the portion of the wall above it. Through this break in the wall the enemy would rush, with a good chance of winning a victory.

STORMING A CASTLE IN OLDEN TIMES

In olden times, no man was safe unless he could protect himself with his own strong arm or the arms of his followers. Thus the home of a knight had to be well fortified. Most of the great castles of that time were located on high, rocky points near a river or lake. In this way they could be entirely surrounded by a moat, or deep ditch filled with water. This moat could be crossed only by means of a drawbridge. The enemy thus would find it very difficult to reach the castle. The castle walls were usually built of heavy stone and were very high and thick. After looking at the ruins of one of these ancient castles and seeing how they were fortified, it is easy to see why only the bravest enemy ever tried to capture one of them. The easiest way, if the foe could spare the time, was to lay siege to the castle. This meant surrounding it, cutting off its food supply, and waiting until those within were starved into surrendering. However, if the enemy could not wait to take the castle by siege, there were three common and usually quicker methods. One way was to try to batter down the walls or gates by means of a machine called a battering-ram. This usually consisted of a heavy iron-headed beam slung on chains between towers on wheels. These towers were moved up close to the walls by the enemy. Then the iron head of the beam was crashed into the gates or against the walls.

DIRECTIONS. Read this story very carefully so that you can answer questions about it. When you hear the word "Stop," put your finger on the word you are reading and wait for further instructions.

TEST 1. RATE-COMPREHENSION — PART C

TEST 6. PART B: USE OF AN INDEX

DIRECTIONS. The answers to the questions in Column 2 are found in the index below. First read the question and then find the desired answer by looking under the proper topic in the index. Then locate your answer among the possible answers given with the question and fill in the answer space in the margin which is numbered the same.

Study the samples carefully before you try to answer the questions.

Look at Sample A. In the index under "Oregon" you will find the word "lumber" and the page reference, 173. 173 is second among the answers given with the question; so the second answer space has been filled in.

Look at Sample B. See if you can find the page reference in the index. The correct answer space is marked.

Answer the remaining exercises the same way.

INDEX

Africa: 19-27; deserts, 216; houses of central, 182; irrigation in northern, 138; map, 55; mountains, 232; Negroes in, 179-181; topography, 181-282.

Astronomy: 22-24; defined, 23; American astronomers, 24; Lowell Observatory, 76.

Botany: defined, 35; study of, 36-38.

California: deserts, 209; grapefruit, 135; irrigation, 135-136; olives, 139; oranges, 132, 134; peaches, 139; petroleum, 263; rainfall, 135; salmon, 204-205; sand dunes, 210; temperatures, 135; truck farming, 122.

Dairy cattle: 73-75; France, 76, 184; Indiana, 65; Ireland, 73; lack in China, 130; lack in Japan, 128; Poland, 84, 86.

Germany: 83-85, 235; cities, 82; dairy, 158; farming, 82; fisheries, 203; manufacturing, 267; potatoes, 82; rainfall, Fig. 82; sugar beets, 82.

Greenland: 23, 24; fisheries, Fig. 2, page 202; temperatures, 187.

Holland: 29, 159, 235; cheese, 160; dairy, 158; farm-houses, 160; fisheries, 203; transportation by canal, 160.

Irrigation: Arizona, Fig. 5, page 136; field crops, 137; Hawaii, 115; Imperial Valley, 220; Nile Basin, 22; southern Africa, 138; Oregon, 138; semi-arid regions, 214; Utah, 210; Washington, 138.

Oregon: 99-105; apples, 138; automobiles, 99; horses, 99; irrigation, 138; lumber, 173; salmon, 205, 207; wheat, 98.

Ranching: Argentina, 161; Australia, 163; ranges, 161-162; reindeer in Alaska, 192; South Africa, 163; Western states, 163. See also Herding.

Sun: altitude of, 30, 32; effect on temperature, 71, 178, 189; sunrise and sunset, 21. See also Solar System.

Texas: cattle farms, 163; cotton, 148; forests, 174; oranges, 132; peaches, 139; pecans, 148; petroleum, 263; rainfall, 148; temperature, 148.

Truck farming: 126; Japanese, 88.

Utah: copper, 240; irrigation, 210-211; map, 230.

Volga River: 101-103; delta, 150; farming beside, 102; life of people, 10; traffic on, 103.

Washington (state): 45-47; apples, 138; automobiles, 99; horses, 99; irrigation, 138; lumber, 173; map, opposite page 47; salmon, 205-207; wheat, 99.

A. What page discusses lumbering in Oregon? 1 138 2 173 3 92 4 98 5 185 . . . A

B. What page gives information about fisheries in Germany? 1 156 2 235 3 83 4 205 5 82 . . . B

1. On what page is information given about irrigating land in northern Africa? 1 19 2 55 3 138 4 179 5 216 . . . 1

2. Next to what page can you find a map of the state of Washington? 1 45 2 47 3 55 4 99 5 138 2 . . . 2

3. Does the index tell where to find about the altitude of the sun? 1 Yes 2 No . . . 3

4. What is the number of the figure which shows about the fisheries of Greenland? 1 1 2 2 3 7 4 23 5 24 . . . 4

5. Under what word in this index is a reference given to the growth of oranges in California? 1 California 2 grapefruit 3 oranges 4 ranching 5 Texas . . . 5

6. On what page can a definition of astronomy be found? 1 20 2 21 3 22 4 23 5 24 6 . . . 6

7. Where is a discussion given about the lack of dairy cattle in Japan? 1 65 2 73 3 76 4 84 5 128 7 . . . 7

8. On what page will information be found about cotton raising in Texas? 1 132 2 139 3 148 4 163 5 174 . . . 8

9. Where will you find a map of Africa? 1 19 2 24 3 27 4 55 5 181 . . . 9

10. Does the index tell you on what page you can find something about the schools of Russia? 1 Yes 2 No . . . 10

11. On what page will you find a figure showing how many acres of land in Arizona are being irrigated? 1 5 2 22 3 115 4 135 5 136 . . . 11

12. Under what topic can you find an additional reference to ranching? 1 butter 2 dairying 3 farming 4 grazing 5 herding . . . 12

13. On what page is cheese making in Holland discussed? 1 29 2 158 3 159 4 160 5 205 13 . . . 13

14. On what page can you find a figure showing the rainfall in Germany? 1 82 2 83 3 158 4 205 5 235 14 . . . 14

15. Where is a map of Utah given? 1 210 2 211 3 230 4 240 5 263 . . . 15

16. On what pages is the study of botany described? 1 22-24 2 35-36 3 36-38 4 179-181 5 181-182 16 . . . 16

17. Can you find information about the study of astronomy at Lick Observatory? 1 Yes 2 No 17 . . . 17

18. On what page will you find information about the river traffic on the Volga? 1 12 2 101 3 102 4 103 5 150 . . . 18

Do not turn this page until you are told to do so.

Number right

TEST 2. DIRECTED READING — PART A

DIRECTIONS. The story about "Sugar Cane" is given below, with each sentence numbered. These numbers are to help you answer more questions about the story. Read each question and find the sentence in the story which answers it. Notice the number of this sentence. Find this number among the answer spaces at the right of the question and fill in the space under it.

Look at Sample A below. Space No. 2 is filled because the question "What plant produces much of the sugar which is made in the United States?" is answered in sentence No. 2 in the story. Study Sample B. Read the question. Sentence No. 1 gives the answer to the question; so space No. 1 should be filled in. Do it now. Answer the other questions in a similar manner.

You will have *five minutes* for this work. You may read parts of the story again if you need to do so.

SUGAR CANE

¹ Sugar is made from several different kinds of plants. ² In the United States, sugar cane is one of the important plants from which we get sugar. ³ In the sugar-cane plant, the stalks or canes are jointed like those of the Indian corn. ⁴ For this reason it is sometimes called a cousin of the Indian corn. ⁵ The plant grows best in a tropical or very warm climate.

⁶ In preparing the land for the planting, it is first plowed. ⁷ Ridges are then thrown up from six to eight feet apart. ⁸ A shallow ditch is made in the top of each ridge. ⁹ Two or three rows of jointed sections cut from the main stalk are laid end to end in this trench. ¹⁰ On large plantations machines cover the stalks. ¹¹ In the smaller fields men with hoes do the work.

¹² Several canes bearing grass-like leaves grow from each root. ¹³ The plants grow rapidly under the heat of the Southern sun. ¹⁴ By harvest time they reach a height of from five to twenty feet and a diameter of about two inches. ¹⁵ For a number of years the cane will spring up from the same roots, but gradually it becomes poorer in quality. ¹⁶ The old root is then plowed up and new cuttings are planted. ¹⁷ Where labor is plentiful, the planting is done each year. ¹⁸ In Louisiana the stubble will produce a good crop the second or even the third year.

¹⁹ Harvesting usually begins in October. ²⁰ It is better to let the cane have just as long as possible to grow, for sugar forms in the juice of the cane most rapidly in the latter part of the life of the cane stalk. ²¹ However, it must be cut before frost injures the quality of the juice in the stalk. ²² When the canes are cut, they are taken in bundles to the mills, where the juice is taken out by running the stalks through heavy rollers. ²³ The crushed stalks are used as fuel for the engines which run the mills.

²⁴ The juice, which is a yellowish-green liquid having a pleasant odor, is then strained and boiled until it thickens. ²⁵ The molasses which we use in our homes is obtained from the first boiling of the juice. ²⁶ Raw sugar is not secured until a more careful refining of the juice has taken place.

SAMPLES.

A. What plant produces much of the sugar made in the United States?.....	A	1	2	3	4	5
B. Do many kinds of plants produce sugar?...	B	1	2	3	4	5
1. Which sentence tells one way in which sugar cane and corn stalks are alike?.....	1	1	2	3	4	5
2. Does sugar cane grow better in a hot or a cold country?.....	2	1	2	3	4	5
3. What relation is the sugar-cane plant to corn?...	3	2	3	4	5	6
4. How far apart are the rows of cane planted?...	4	3	4	5	6	7
5. What is the first step in getting land ready for planting sugar cane?	5	5	6	7	8	9
6. How do owners of large sugar-cane fields cover the cane stalks when planting?	6	6	7	8	9	10
7. What kind of leaves does the sugar-cane plant grow?	7	8	9	10	11	12
4→						
8. How tall does sugar cane sometimes grow? ...	8	10	11	12	13	14
9. Does the sugar-cane plant grow fast or slowly?...	9	10	11	12	13	14
10. Under what conditions are new cane stalks planted each year?	10	13	14	15	16	17
11. When the old plants fail to produce, what is done to get a better crop?.....	11	13	14	15	16	17
12. Where could a man who raises sugar cane get results without planting each year?.....	12	15	16	17	18	19
13. When is the cutting of sugar cane usually begun?	13	17	18	19	20	21
14. What danger is there in waiting too long before harvesting sugar cane?	14	18	19	20	21	22
15. When does the cane juice become richest in sugar?	15	20	21	22	23	24
16. How is the juice removed from the stalks?...	16	20	21	22	23	24
17. What color is the cane juice?	17	21	22	23	24	25
18. What product is made after the cane juice has been cooked only once?	18	22	23	24	25	26
19. What are the stalks used for after the juice has been removed?	19	22	23	24	25	26
20. What is the process called by which the raw sugar is obtained?	20	23	24	25	26	27

Do not turn this page until you are told to do so.

Number right.

TEST 6. PART A: ALPHABETIZING; USING GUIDE WORDS

COLUMN 1

DIRECTIONS. This test will show how well you are able to locate words in an alphabetical list such as in the dictionary.

Study the sample below. List A contains the words to be located. List B is made up of guide words such as are placed at the top of a page of a dictionary to tell you which words are included on that page.

For each word in List A you are to find the pair of guide words between which the word would be found in an alphabetical list. Notice the number of this pair of words. Then fill in the answer space under this same number at the right of the word in List A.

SAMPLE

List B
(Guide Words)

List A
(Words to Be Located)

1. and — are	1	2	3	4	5
2. arm — ask	1	2	3	4	5
3. bad — big	1	2	3	4	5
4. bill — bird	1	2	3	4	5
5. cab — cat	1	2	3	4	5
any	1	2	3	4	5
car	1	2	3	4	5
bed	1	2	3	4	5

COLUMN 2

List B
(Guide Words)

List A
(Words to Be Located)

1. able — action	1	2	3	4	5
2. after — agree	1	2	3	4	5
3. aid — also	1	2	3	4	5
4. apart — applied	1	2	3	4	5
5. apply — autumn	1	2	3	4	5
6. bill — bite	1	2	3	4	5
7. bitter — blind	1	2	3	4	5
8. cake — called	1	2	3	4	5
9. care — cart	1	2	3	4	5
10. comb — coming	1	2	3	4	5
11. gem — gentle	1	2	3	4	5
12. gently — get	1	2	3	4	5
13. give — goose	1	2	3	4	5
14. half — hang	1	2	3	4	5
15. head — heart	1	2	3	4	5
16. kind — knee	1	2	3	4	5
17. knob — known	1	2	3	4	5
18. make — most	1	2	3	4	5
19. rain — rat	1	2	3	4	5
20. reach — ready	1	2	3	4	5
21. reason — roll	1	2	3	4	5
22. sack — said	1	2	3	4	5
23. sail — salt	1	2	3	4	5
24. sat — say	1	2	3	4	5
25. uncle — union	1	2	3	4	5
26. unite — use	1	2	3	4	5
27. well — who	1	2	3	4	5
28. words — worm	1	2	3	4	5
29. yard — yarn	1	2	3	4	5
30. year — yes	1	2	3	4	5
unlike	1	2	3	4	5
years	1	2	3	4	5
under	1	2	3	4	5
worked	1	2	3	4	5
rod	1	2	3	4	5
save	1	2	3	4	5
raise	1	2	3	4	5
knot	1	2	3	4	5
kitten	1	2	3	4	5
hear	1	2	3	4	5
generous	1	2	3	4	5
handle	1	2	3	4	5
cares	1	2	3	4	5
black	1	2	3	4	5
calf	1	2	3	4	5
aim	1	2	3	4	5
automobile	1	2	3	4	5
above	1	2	3	4	5
appeal	1	2	3	4	5
agent	1	2	3	4	5

Do not turn this page until you are told to do so.

For example, *bed*, the first word in List A in the sample, will be found in the dictionary between *bad* and *big*. This pair is No. 3 in List B; so the third answer space after *bed* is filled in. The second word in List A, *car*, is found between *cab* and *cat*, the fifth pair in List B. Therefore, answer space No. 5 has been filled in after *car*. Where would the third word, *any*, be found? This sample exercise is answered correctly by filling in answer space No. 1.

Do the exercises in Column 2 in a similar way. Notice that some guide words may be used more than once and some may not be used at all.

TEST 2. DIRECTED READING — PART B

DIRECTIONS. The story about "Storming a Castle in Olden Times" is given below, with each sentence numbered. Read each question and find the sentence in the story which answers it. Notice the number of this sentence. Find this number among the answer spaces at the right of the question and fill in the space under it. The sample is answered correctly.

You will have *five minutes* for this work. Read parts of the story again if you need to do so. ➔

STORMING A CASTLE IN OLDEN TIMES

¹ In olden times, no man was safe unless he could protect himself with his own strong arm or the arms of his followers. ² Thus the home of a knight had to be well fortified. ³ Most of the great castles of that time were located on high, rocky points near a river or lake. ⁴ In this way they could be entirely surrounded by a moat, or deep ditch filled with water. ⁵ This moat could be crossed only by means of a drawbridge. ⁶ The enemy thus would find it very difficult to reach the castle. ⁷ The castle walls were usually built of heavy stone and were very high and thick.

⁸ After looking at the ruins of one of these ancient castles and seeing how they were fortified, it is easy to see why only the bravest enemy ever tried to capture one of them. ⁹ The easiest way, if the foe could spare the time, was to lay siege to the castle. ¹⁰ This meant surrounding it, cutting off its food supply, and waiting until those within were starved into surrendering. ¹¹ However, if the enemy could not wait to take the castle by siege, there were three common and usually quicker methods.

¹² One way was to try to batter down the walls or gates by means of a machine called a battering-ram. ¹³ This usually consisted of a heavy iron-headed beam slung on chains between towers on wheels. ¹⁴ These towers were moved up close to the walls by the enemy. ¹⁵ Then the iron head of the beam was crashed into the gates or against the walls.

¹⁶ Often the walls were too strong to be broken down by this battering-ram. ¹⁷ Then the enemy must use his second method of attack. ¹⁸ This meant that he must get to the top of the walls and overpower the defenders. ¹⁹ For this purpose a tall wooden tower as high as the castle walls was built and set on rollers. ²⁰ The moat was then filled with rocks and trees to make a roadway. ²¹ Then the tower, filled with men, was rolled across the moat and up to the wall. ²² The moment it was near the walls, a drawbridge was let fall from the top of the tower to the wall. ²³ The attackers rushed across, and the battle was on. ²⁴ Of course, the defenders of the castle were not idle. ²⁵ Heavy stones were hurled upon the tower to wreck it. ²⁶ Often they tried to burn it and the men by throwing blazing tar and pitch upon the tower.

²⁷ Another method of attack was to try to undermine the walls of the castle. ²⁸ If the walls rested on rock, this method of attack was usually not successful. ²⁹ But if the walls were built on soft soil, it was often possible for the enemy to dig an underground passage under the very base of the walls. ³⁰ The top of the passage was supported by heavy beams. ³¹ These kept the roof from caving in while the digging was going on. ³² Later these beams were set on fire, with the result that the top of the passageway would fall in and with it the portion of the wall above it. ³³ Through this break in the wall the enemy would rush, with a good chance of winning a victory.

SAMPLE. Which sentence tells how a knight protected himself in olden times?

- | | | | | | |
|--|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 |
| 1. What kind of place was usually chosen for a castle? | 1 | 2 | 3 | 4 | 5 |
| 2. How did a friendly visitor get across this deep ditch to the castle gate? | 2 | 3 | 4 | 5 | 6 |
| 3. What name was given to the water-filled ditch around the castle grounds? | 4 | 5 | 6 | 7 | 8 |
| 4. Of what were the castle walls usually made? | 5 | 6 | 7 | 8 | 9 |
| 5. What was the easiest way of taking a castle in olden times? | 8 | 9 | 10 | 11 | 12 |
| 6. What word describes the man who would try to take a large castle? | 8 | 9 | 10 | 11 | 12 |
| 7. What is meant by laying siege to a castle? | 10 | 11 | 12 | 13 | 14 |
| 8. How was a battering-ram made? | 12 | 13 | 14 | 15 | 16 |
| 9. Were castle walls sometimes difficult to crush with a battering-ram? | 15 | 16 | 17 | 18 | 19 |
| 10. What part of the battering-ram was used to break down the walls? | 15 | 16 | 17 | 18 | 19 |

5➔

- | | | | | | |
|--|----|----|----|----|----|
| 11. What was a second method of attack, used when the walls could not be crashed? | 18 | 19 | 20 | 21 | 22 |
| 12. What did the enemy usually use to get to the top of the castle walls? | 18 | 19 | 20 | 21 | 22 |
| 13. What did the enemy use to get across from the tower to the castle wall? | 20 | 21 | 22 | 23 | 24 |
| 14. What was used to make a roadway close up to the castle when the attack was made? | 20 | 21 | 22 | 23 | 24 |
| 15. What did the defenders often use to try to burn the enemy? | 24 | 25 | 26 | 27 | 28 |
| 16. How did the men in the castle try to crush the movable towers? | 24 | 25 | 26 | 27 | 28 |
| 17. What was the third common method of attack? | 27 | 28 | 29 | 30 | 31 |
| 18. Was undermining a good method when the castle was built on soft soil? | 29 | 30 | 31 | 32 | 33 |
| 19. How did the enemy keep the tunnel from caving in while it was being dug? | 30 | 31 | 32 | 33 | 34 |
| 20. What made the castle wall cave in when the enemy was ready to attack? | 31 | 32 | 33 | 34 | 35 |

Do not turn this page until you are told to do so.

➔

Number right

TEST 3. PART A: GENERAL VOCABULARY

DIRECTIONS. One of the four numbered words in each exercise means almost the same as the first word. Find the word. Note its number. Then mark the answer space in the margin which is numbered the same.

SAMPLE.	Little —	1 real	2 light	3 small	4 brittle	1	2	3	4
1. True —		1 wise	2 correct	3 brave	4 obedient	1			
2. Level —		1 flat	2 large	3 crooked	4 gravel	2			
3. Fright —		1 fear	2 fight	3 enemy	4 courage	3			
4. Perform —		1 form	2 smile	3 act	4 jump	4			
5. Common —		1 ordinary	2 good	3 easy	4 complete	5			
6. Slender —		1 long	2 tall	3 straight	4 slim	6			
7. Quietly —		1 soundly	2 quickly	3 silently	4 fast	7			
8. Hastily —		1 rudely	2 heartily	3 strangely	4 quickly	8			
9. Gently —		1 neatly	2 nicely	3 kindly	4 lovely	9			
10. Idly —		1 naughtily	2 sickly	3 busily	4 lazily	10			
11. Magnificent —		1 magic	2 wonderful	3 good	4 electric	11			
12. Annoyance —		1 disturbance	2 condition	3 help	4 enjoyment	12			
6→									
13. Ancient —		1 wrecked	2 long	3 angry	4 old	13			
14. Annual —		1 weekly	2 monthly	3 daily	4 yearly	14			
15. Absurd —		1 absent	2 ridiculous	3 manifest	4 afraid	15			
16. Refresh —		1 reform	2 water	3 revive	4 destroy	16			
17. Consequently —		1 consciously	2 thus	3 accordingly	4 frequently	17			
18. Sinewy —		1 false	2 strong	3 sincere	4 dewy	18			
19. Motive —		1 native	2 motor	3 reason	4 chance	19			
20. Everlasting —		1 remaining	2 eternal	3 easy	4 eventful	20			
21. Preëminent —		1 superior	2 sure	3 bothered	4 skilled	21			
22. Anxiety —		1 curiosity	2 worry	3 sadness	4 hatred	22			
23. Harass —		1 hitch	2 name	3 trouble	4 harness	23			
24. Animosity —		1 friendship	2 activity	3 hostility	4 anniversary	24			
25. Manifestation —		1 wonder	2 feasting	3 station	4 display	25			
26. Peradventure —		1 going	2 perhaps	3 exciting	4 hardship	26			
27. Prodigious —		1 prodigy	2 industrious	3 cruel	4 huge	27			

Do not work on the next part until you are told to do so.

Number right.....

6. The first silk came from China. There, many thousands of years ago, patient workers began to study the silkworm and to experiment with the cocoon. They learned how to reel off the threads and prepare them for use, and finally to manufacture many articles. The facts about the first silk industry are gathered from early notices by the Chinese government concerning the rules of the silk culture. This industry was considered so important that efforts were made to prevent knowledge of silkworms from being taken out of China.

7. All rivers, sooner or later, pour their water into the sea and carry with them a large amount of salt which is easily dissolved in the water. Consequently the rivers are carrying salt away all the time because salt is very common in the soil. The waters of the ocean are evaporated by the sun, but none of the salt is taken up into the clouds. The water that returns to the earth in rain has no salt; but by the time it reaches the sea again, after soaking through the soil and flowing down the rivers, it has taken on another load of salt. The oceans are thus receiving salt all the time, but are never giving it up.

- A. Choose the best title for the paragraph. 1 The Importance of the Silk Industry 2 The Way Silk Is Made 3 The Origin of the Silk Industry
- B. Why would the government have rules concerning the silk industry? 1 to prevent the stealing of cocoons 2 to save the mulberry trees 3 to keep the industry at home
- C. The first record of the silk industry shows that it originated in — 1 Japan 2 China 3 India

- A. Choose the best title for the paragraph. 1 What Makes the Ocean Salty 2 How Water Returns from the Ocean to the Land 3 How the Waters of the Ocean Evaporate
- B. How do rivers carry salt to the ocean? 1 Salt is dissolved in water as it runs into the soil. 2 Salt is commonly found in soil. 3 Rain water is heavily loaded with salt.
- C. The water of the ocean becomes more and more salty because — 1 the bottom of the ocean is covered with salt 2 the salt in the ocean water is not evaporated into the clouds 3 the salt comes to the top of the water.

8. Flowers are put out by plants for the purpose of developing seed. The seed in its turn will produce new plants and flowers. The bright colors and perfumes of the flowers are needed to attract the insects, which carry pollen from one plant to another to make the seeds fertile. When this has been done, the need for the flower is gone. The plant then calls its life-giving juices back into the stalk and leaves, and the flower withers away.

- A. Choose the best title for the paragraph. 1 How Seeds Are Fertilized 2 Where Flower Seeds Are Developed 3 Why Plants Need Flowers
- B. What attracts insects to the flowers of plants? 1 the perfume 2 the seeds 3 the pollen dust
- C. The sweet-smelling flowers are useful to plants because — 1 they produce the seed for new plants 2 they are brightly colored 3 they give off pollen

9. The principal food of the starfish is the oyster. The starfish will wrap itself around the oyster and fasten its hundreds of sucker-like feet to both sides of the shell. Then begins a tug of war, the oyster exerting itself to keep the shell closed and the starfish straining to force it open. The starfish always wins, for finally through weariness the muscles of the oyster relax and the shell is opened enough so that the flesh is exposed to the starfish.

- A. Choose the best title for the paragraph. 1 How the Starfish Eats Oysters 2 How the Oyster Protects Itself 3 What the Starfish Eats
- B. How does the starfish open the oyster's shell? 1 cuts through the shell 2 crushes it 3 pulls it open with its feet
- C. The oyster always loses its fight with a starfish because — 1 the starfish is the stronger 2 the oyster cannot swim away to safety 3 the excitement of the struggle kills it

10. Swordfish are fighters, striking with lightning speed. Sometimes in their excitement they attack boats and ships, evidently mistaking them for whales. They have been known to drive their long, sharp weapons into the heavy copper sheathing, oak planks, and timbers of a ship to a depth of ten inches. In the British Museum in London there is a section of ship planking a foot square which contains the broken ends of three swords of these fish, driven in during a combined attack on a sailing vessel.

- A. Choose the best title for the paragraph. 1 The Sword of the Swordfish 2 The Speed and Power of the Swordfish 3 The Swordfish and the Whale
- B. How far into the bottom of a ship have swordfish been known to pierce with their swords? 1 three feet 2 ten inches 3 two inches
- C. Swordfish are wicked fighters because of their — 1 size and shape 2 bad tempers 3 long, sharp upper jaws

TEST 3. PART B: SUBJECT-MATTER VOCABULARY

DIRECTIONS. Answer these exercises just as you did in Part A. The sample is answered correctly.

SAMPLE. Big — 1 new 2 large 3 good 4 easy.....

1. Agriculture —	1 rural life	2 agreement	3 farming	4 archæology	1	2	3	4
2. Altitude —	1 height	2 alternate	3 level	4 drawn out.....	2			
3. Exile —	1 excite	2 banish	3 exist	4 kill.....	3			
4. Enforce —	1 make laws	2 deface	3 compel	4 police	4			
5. Circumference —	1 distance around a circle	2 circulation	3 area	4 distance through ..	5			
6. Barrier —	1 country	2 barren land	3 hindrance	4 sea	6			
7. Enlist —	1 arm	2 enlighten	3 enliven	4 enroll.....	7			
8. Combine —	1 unite	2 compare	3 change	4 compute.....	8			
9. Yield —	1 farm	2 yell	3 produce	4 market.....	9			
10. Era —	1 prosperity	2 eraser	3 good feeling	4 period of time.....	10			
11. Abdomen —	1 nervous system	2 head	3 middle part of body	4 feet.....	11			
12. Decrease —	1 decree	2 become less	3 change about	4 expand.....	12			
13. Circumnavigate —	1 withstand	2 circulate	3 sail across	4 sail around.....	13			
					7→			
14. Fugitive —	1 follower	2 one who flees	3 one who chases	4 enemy.....	14			
15. Distance —	1 diameter	2 disdain	3 ground covered	4 space between two objects	15			
16. Illiterate —	1 uneducated	2 ill-natured	3 foreign	4 illuminated	16			
17. Cultivate —	1 culminate	2 till	3 harvest	4 send.....	17			
18. Equal —	1 different	2 wrong	3 the same	4 correct.....	18			
19. Insurrection —	1 secession	2 insurance	3 punishment	4 rebellion	19			
20. Example —	1 examination	2 sample	3 answer	4 solution	20			
21. Dam —	1 a waterfall	2 damage	3 a barrier to keep in water	4 a power house...	21			
22. Express —	1 experiment	2 state	3 expose	4 follow.....	22			
23. Delta —	1 navigation helps	2 deluge	3 sand bar	4 deposit at river's mouth.....	23			
24. Pardon —	1 forgive	2 punish	3 dismiss	4 accept.....	24			
25. Fraction —	1 fracture	2 a part	3 whole number	4 problem	25			
26. Quota —	1 army	2 quotient	3 soldier	4 certain amount.....	26			
27. Anatomy —	1 ancestry	2 skeleton	3 physiology	4 hygiene.....	27			
28. Zero —	1 nothing	2 cold	3 a minus quantity	4 a small number.....	28			

Do not turn this page until you are told to do so.

Number right.....

TEST 4. PARAGRAPH COMPREHENSION

DIRECTIONS. Read each paragraph carefully, and then study the questions A, B, and C at the right. Select the correct answer. Notice the number of this answer. In the margin at the right, fill in the answer space under this number.

2. The toad is very lucky in having a tongue which is well suited for its work of catching his food. It has a sticky surface and is fastened at the front instead of at the back. It is possible for the toad to move the tongue well out of the mouth. When a bit of food such as a fly gets within two inches of his nose, the toad does not seem to move but the mouth opens and the food is caught by the swiftly moving tongue.

- 1
- A. Choose the best title for the paragraph.
1 How a Toad Catches Flies 2 The Toad's Feeding Habits 3 The Tongue of the Toad
- B. Why is it so easy for the toad to catch flies?
1 He can snap his long tongue out of his mouth. 2 His jaws open swiftly. 3 He can jump so quickly.
- C. A toad can catch a fly if — 1 it is close enough for him to see it 2 it is as close as two inches to his jaws 3 it is not over two feet away

2. A small quantity of oil poured on the sea spreads rapidly and helps to reduce the violence of the waves in a storm. A gale ordinarily forms ripples and small waves on the backs of greater waves and causes the crests to curl over, so that they break with destructive force on the deck of a vessel. At such a time the film of oil seems to decrease the force of the wind on the water and prevents the large waves from curling and breaking.

- 2
- A. Choose the best title for the paragraph.
1 How Waves Form Crests 2 How Oil Quiets Water 3 A Storm at Sea
- B. How does a film of oil quiet the waves during an ocean storm? 1 It slows up the speed of the wind. 2 It prevents the wave crests from breaking over. 3 It softens the shock on the vessel.
- C. Destructive waves in an ocean storm are calmed by — 1 strong winds 2 running the vessel with the wind 3 spreading a film of oil on the waves of the water.

3. When a river enters a lake or the sea, its current is slowed down. The finest part of the waste which it carries may be swept away by waves and tides; the rest accumulates at the river mouth and builds up a new land surface called a "delta." The delta thus extends out into the sea. Small deltas are characteristic of young rivers. The older the river, the larger the delta becomes.

- 3
- A. Choose the best title for the paragraph.
1 Adding to the Land Surface 2 Old River Deltas 3 The Formation of Deltas
- B. What kinds of rivers build large deltas? 1 old long rivers 2 rocky mountain streams 3 young rivers.
- C. Larger deltas are formed — 1 in the beds of long rivers 2 at the mouths of old rivers 3 in old river valleys.

4. About three fourths of the total corn crop of the world is raised in the United States. Argentina, in South America, also produces a great deal of corn and actually imports some into the United States. Corn is also grown in southern Europe, China, and some parts of Africa. Corn is grown in almost any part of the United States, but the corn belt of the Mississippi Valley grows the largest percentage of our corn. With improved methods of cultivation the corn belt is rapidly extending its bounds south and west.

- 4
- A. Choose the best title for the paragraph.
1 Where Corn Is Grown 2 How Corn Is Grown 3 The Corn Belt
- B. What share of the world's corn crop is raised in the United States? 1 one fourth 2 one half 3 three fourths.
- C. Most of the corn imported into the United States comes from — 1 Argentina 2 Africa 3 southern Europe.

5. The duck has an oil gland which is constantly producing fat or oil. Since oil and water will not mix the duck gives his feathers a thin coat of oil for the purpose of keeping out the water. The duck's feathers are also very thick, so that even if the oil did not make them waterproof the water would have difficulty in soaking through. All birds which live in water have oil glands which keep their feathers from getting wet.

- 5
- A. Choose the best title for the paragraph. 1 Why Oil and Water Do Not Mix 2 How Water Is Kept from Ducks 3 How Ducks Oil Their Feathers
- B. What does the duck use on his feathers to make them waterproof? 1 fine dust 2 a coating of oil 3 a splash of water.
- C. The duck is able to keep his body dry in the water because — 1 he has a gland which produces water 2 his feathers are thick 3 oil and water do not mix.

OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

By ARTHUR S. OTIS

Formerly Development Specialist with Advisory Board, General Staff, United States War Department

HIGHER EXAMINATION: FORM A

20

For High Schools and Colleges

Score.....

Read this page. Do what it tells you to do.

Do not open this paper, or turn it over, until you are told to do so. Fill these blanks, giving your name, age, birthday, etc. Write plainly.

Name.....Age last birthday.....years
First name, initial, and last name

Birthday.....Class.....Date.....19....
Month Day

School or College.....City.....

This is a test to see how well you can think. It contains questions of different kinds. Here is a sample question already answered correctly. Notice how the question is answered:

Which one of the five words below tells what an apple is?

1 flower, 2 tree, 3 vegetable, 4 fruit, 5 animal.....(4)

The right answer, of course, is "fruit"; so the word "fruit" is underlined. And the word "fruit" is No. 4; so a figure 4 is placed in the parentheses at the end of the dotted line. This is the way you are to answer the questions.

Try this sample question yourself. Do not write the answer; just draw a line under it and then put its number in the parentheses:

Which one of the five words below means the opposite of north?

1 pole, 2 equator, 3 south, 4 east, 5 west.....()

The answer, of course, is "south"; so you should have drawn a line under the word "south" and put a figure 3 in the parentheses. Try this one:

A foot is to a man and a paw is to a cat the same as a hoof is to a — what?

1 dog, 2 horse, 3 shoe, 4 blacksmith, 5 saddle.....()

The answer, of course, is "horse"; so you should have drawn a line under the word "horse" and put a figure 2 in the parentheses. Try this one:

At four cents each, how many cents will 6 pencils cost?.....()


The answer, of course, is 24, and there is nothing to underline; so just put the 24 in the parentheses. If the answer to any question is a number or a letter, put the number or letter in the parentheses without underlining anything. Make all letters like printed capitals.

The test contains 75 questions. You are not expected to be able to answer all of them, but do the best you can. You will be allowed half an hour after the examiner tells you to begin. Try to get as many right as possible. Be careful not to go so fast that you make mistakes. Do not spend too much time on any one question. No questions about the test will be answered by the examiner after the test begins. Lay your pencil down.

Do not turn this page until you are told to begin.

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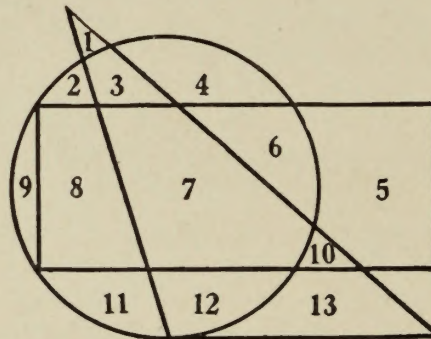
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EXAMINATION BEGINS HERE :

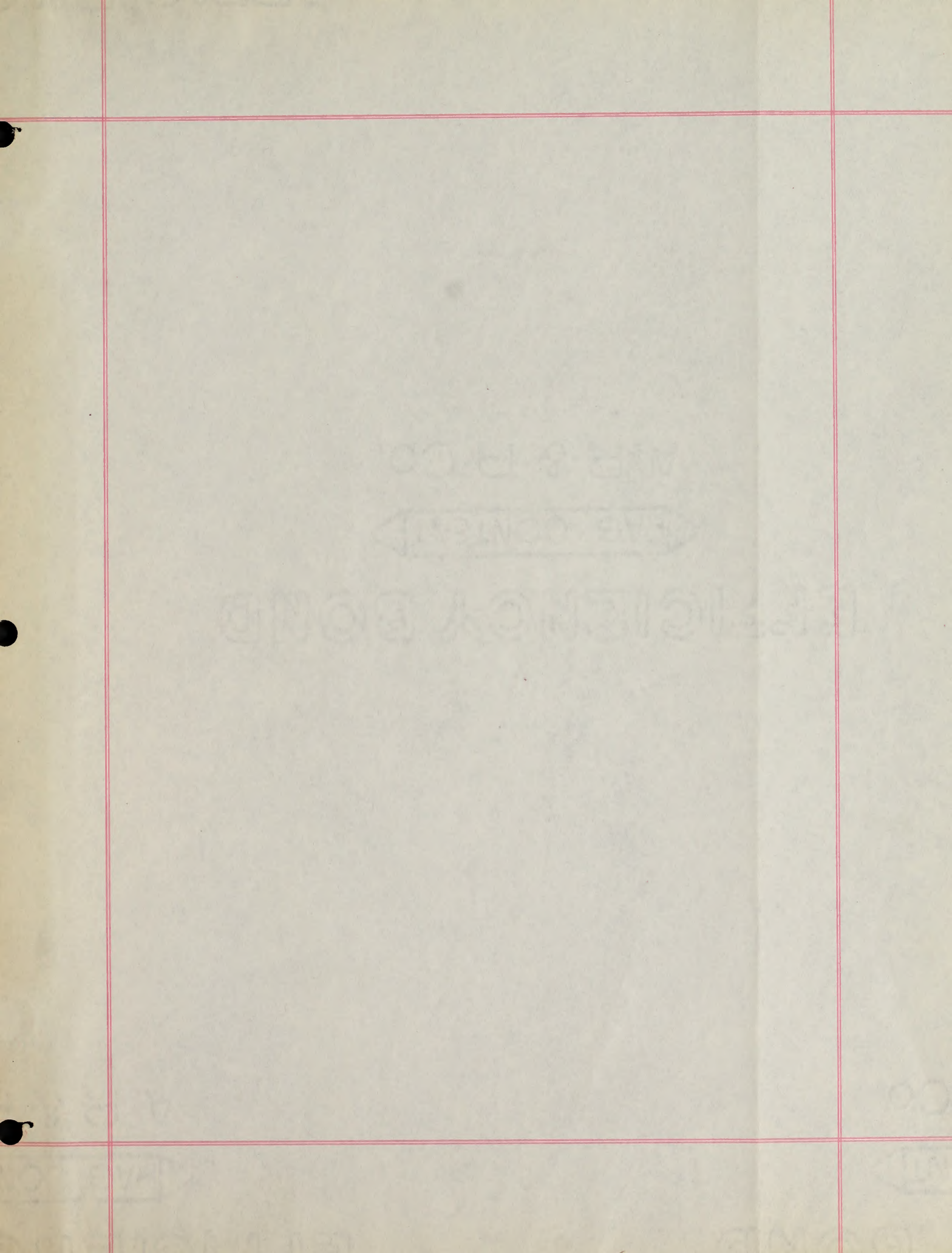
1. The opposite of hate is (?)
1 enemy, 2 fear, 3 love, 4 friend, 5 joy..... ()
2. If 3 pencils cost 5 cents, how many pencils can be bought for 50 cents?..... ()
3. A bird does not always have (?)
1 wings, 2 eyes, 3 feet, 4 a nest, 5 a bill..... ()
4. The opposite of honor is (?)
1 glory, 2 disgrace, 3 cowardice, 4 fear, 5 defeat..... ()
5. A fox most resembles a (?)
1 wolf, 2 goat, 3 pig, 4 tiger, 5 cat..... ()
6. Quiet is related to sound in the same way that darkness is related to (?)
1 a cellar, 2 sunlight, 3 noise, 4 stillness, 5 loud..... ()
7. A party consisted of a man and his wife, his two sons and their wives, and four children in each son's family. How many were there in the party?..... ()
8. A tree always has (?)
1 leaves, 2 fruit, 3 buds, 4 roots, 5 a shadow..... ()
9. The opposite of economical is (?)
1 cheap, 2 stingy, 3 extravagant, 4 value, 5 rich..... ()
10. Silver is more costly than iron because it is (?)
1 heavier, 2 scarcer, 3 whiter, 4 harder, 5 prettier..... ()
11. Which one of the six statements below tells the meaning of the following proverb? "The early bird catches the worm."..... ()
 1. Don't do the impossible.
 2. Weeping is bad for the eyes.
 3. Don't worry over troubles before they come.
 4. Early birds like worms best.
 5. Prompt persons often secure advantages over tardy ones.
 6. It is foolish to fret about things we can't help.
12. Which statement above tells the meaning of this proverb? "Don't cry over spilt milk.".... ()
13. Which statement above explains this proverb? "Don't cross a bridge till you get to it.".... ()
14. An electric light is related to a candle as an automobile is to (?)
1 a carriage, 2 electricity, 3 a tire, 4 speed, 5 glow..... ()
15. If a boy can run at the rate of 6 feet in $\frac{1}{4}$ of a second, how many feet can he run in 10 seconds? ()
16. A meal always involves (?)
1 a table, 2 dishes, 3 hunger, 4 food, 5 water..... ()
17. Of the five words below, four are alike in a certain way. Which is the one not like these four?
1 bend, 2 shave, 3 chop, 4 whittle, 5 shear..... ()
18. The opposite of never is (?)
1 often, 2 sometimes, 3 occasionally, 4 always, 5 frequently..... ()
19. A clock is related to time as a thermometer is to (?)
1 a watch, 2 warm, 3 a bulb, 4 mercury, 5 temperature..... ()
20. Which word makes the truest sentence? Men are (?) shorter than their wives.
1 always, 2 usually, 3 much, 4 rarely, 5 never..... ()
21. One number is wrong in the following series. What should that number be?
1 4 2 5 3 6 4 7 5 9 6 9..... ()
22. If the first two statements following are true, the third is (?) All members of this club are Republicans. Smith is not a Republican. Smith is a member of this club.
1 true, 2 false, 3 not certain..... ()
23. A contest always has (?)
1 an umpire, 2 opponents, 3 spectators, 4 applause, 5 victory..... ()
24. Which number in this series appears a second time nearest the beginning?
6 4 5 3 7 8 0 9 5 9 8 8 6 5 4 7 3 0 8 9 1..... ()
25. The moon is related to the earth as the earth is to (?)
1 Mars, 2 the sun, 3 clouds, 4 stars, 5 the universe..... ()
26. Which word makes the truest sentence? Fathers are (?) wiser than their sons.
1 always, 2 usually, 3 much, 4 rarely, 5 never..... ()

27. The opposite of awkward is (?)
1 strong, 2 pretty, 3 short, 4 graceful, 5 swift..... ()
28. A mother is always (?) than her daughter.
1 wiser, 2 taller, 3 stouter, 4 older, 5 more wrinkled..... ()
29. Which one of the six statements below tells the meaning of the following proverb? "The burnt child dreads the fire."..... ()
1. Frivolity flourishes when authority is absent.
 2. Unhappy experiences teach us to be careful.
 3. A thing must be tried before we know its value.
 4. A meal is judged by the dessert.
 5. Small animals never play in the presence of large ones.
 6. Children suffer more from heat than grown people.
30. Which statement above explains this proverb? "When the cat is away, the mice will play." ()
31. Which statement above explains this proverb? "The proof of the pudding is in the eating." ()
32. If the settlement of a difference is made by mutual concession, it is called a (?)
1 promise, 2 compromise, 3 injunction, 4 coercion, 5 restoration..... ()
33. What is related to disease as carefulness is to accident?
1 doctor, 2 surgery, 3 medicine, 4 hospital, 5 sanitation..... ()
34. Of the five things below, four are alike in a certain way. Which is the one not like these four?
1 smuggle, 2 steal, 3 bribe, 4 cheat, 5 sell..... ()
35. If 10 boxes full of apples weigh 400 pounds, and each box when empty weighs 4 pounds, how many pounds do all the apples weigh?..... ()
36. The opposite of hope is (?)
1 faith, 2 misery, 3 sorrow, 4 despair, 5 hate..... ()
37. If all the odd-numbered letters in the alphabet were crossed out, what would be the tenth letter not crossed out? Print it. *Do not mark the alphabet.*
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z..... ()
38. What letter in the word SUPERFLUOUS is the same number in the word (counting from the beginning) as it is in the alphabet? Print it..... ()
39. What people say about a person constitutes his (?)
1 character, 2 gossip, 3 reputation, 4 disposition, 5 personality..... ()
40. If $2\frac{1}{2}$ yards of cloth cost 30 cents, how many cents will 10 yards cost?..... ()
41. If the words below were arranged to make a good sentence, with what letter would the second word of the sentence begin? Make it like a printed capital.
same means big large the as..... ()
42. If the first two statements following are true, the third is (?) George is older than Frank.
James is older than George. Frank is younger than James.
1 true, 2 false, 3 not certain..... ()
43. Suppose the first and second letters in the word CONSTITUTIONAL were interchanged, also the third and fourth letters, the fifth and sixth, etc. Print the letter that would then be the twelfth letter counting to the right..... ()
44. One number is wrong in the following series. What should that number be?
0 1 3 6 10 15 21 28 34..... ()
45. If $4\frac{1}{2}$ yards of cloth cost 90 cents, how many cents will $2\frac{1}{2}$ yards cost?..... ()
46. A man's influence in a community should depend upon his (?)
1 wealth, 2 dignity, 3 wisdom, 4 ambition, 5 political power..... ()
47. What is related to few as ordinary is to exceptional?
1 none, 2 some, 3 many, 4 less, 5 more..... ()
48. The opposite of treacherous is (?)
1 friendly, 2 brave, 3 wise, 4 cowardly, 5 loyal..... ()
49. Which one of the five words below is most unlike the other four?
1 good, 2 large, 3 red, 4 walk, 5 thick..... ()
50. If the first two statements following are true, the third is (?) Some of Brown's friends are Baptists. Some of Brown's friends are dentists. Some of Brown's friends are Baptist dentists.
1 true, 2 false, 3 not certain..... ()
51. How many of the following words can be made from the letters in the word LARGEST, using any letter any number of times?
great, stagger, grasses, trestle, struggle, rattle, garage, strangle..... ()
52. The statement that the moon is made of green cheese is (?)
1 absurd, 2 misleading, 3 improbable, 4 unfair, 5 wicked..... ()

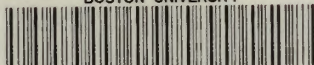
53. Of the five things following, four are alike in a certain way. Which is the one not like these four?
1 tar, 2 snow, 3 soot, 4 ebony, 5 coal..... ()
54. What is related to a cube in the same way in which a circle is related to a square?
1 circumference, 2 sphere, 3 corners, 4 solid, 5 thickness..... ()
55. If the following words were seen on a wall by looking in a mirror on an opposite wall, which word would appear exactly the same as if seen directly?
1 OHIO, 2 SAW, 3 NOON, 4 MOTOR, 5 OTTO..... ()
56. If a strip of cloth 24 inches long will shrink to 22 inches when washed, how many inches long will a 36-inch strip be after shrinking?..... ()
57. Which of the following is a trait of character?
1 personality, 2 esteem, 3 love, 4 generosity, 5 health..... ()
58. Find the two letters in the word DOING which have just as many letters between them in the word as in the alphabet. Print the one of these letters that comes first in the alphabet.
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z..... ()
59. Revolution is related to evolution as flying is to (?)
1 birds, 2 whirling, 3 walking, 4 wings, 5 standing..... ()
60. One number is wrong in the following series. What should that number be?
1 3 9 27 81 108..... ()
61. If Frank can ride a bicycle 30 feet while George runs 20 feet, how many feet can Frank ride while George runs 30 feet?..... ()
62. Count each N in this series that is followed by an O next to it if the O is not followed by a T next to it. Tell how many N's you count.
N O N T Q M N O T M O N O O N Q M N N O Q N O T O N A M O N O M..... ()
63. A man who is averse to change and progress is said to be (?)
1 democratic, 2 radical, 3 conservative, 4 anarchistic, 5 liberal..... ()
64. Print the letter which is the fourth letter to the left of the letter which is midway between O and S in the alphabet..... ()
65. What number is in the space which is in the rectangle and in the circle but not in the triangle? ()



66. What number is in the same geometrical figure or figures as the number 8?..... ()
67. How many spaces are there that are in any two but only two geometrical figures?..... ()
68. A surface is related to a line as a line is to (?)
1 solid, 2 plane, 3 curve, 4 point, 5 string..... ()
69. If the first two statements following are true, the third is (?) One cannot become a good violinist without much practice. Charles practices much on the violin. Charles will become a good violinist.
1 true, 2 false, 3 not certain..... ()
70. If the words below were arranged to make the best sentence, with what letter would the last word of the sentence end? Print the letter as a capital.
sincerity traits courtesy character of desirable and are..... ()
71. A man who is influenced in making a decision by preconceived opinions is said to be (?)
1 influential, 2 prejudiced, 3 hypocritical, 4 decisive, 5 impartial..... ()
72. A hotel serves a mixture of 2 parts cream and 3 parts milk. How many pints of cream will it take to make 15 pints of the mixture?..... ()
73. What is related to blood as physics is to motion?
1 temperature, 2 veins, 3 body, 4 physiology, 5 geography..... ()
74. A statement the meaning of which is not definite is said to be (?)
1 erroneous, 2 doubtful, 3 ambiguous, 4 distorted, 5 hypothetical..... ()
75. If a wire 20 inches long is to be cut so that one piece is $\frac{3}{5}$ as long as the other piece, how many inches long must the shorter piece be?..... ()



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